

EXHIBIT F

ORIGINAL

1 UNITED STATES DISTRICT COURT
2 FOR THE DISTRICT OF NEW JERSEY

3
4 MARIA E. MEDINA, for the :
5 Estate of Edwin Medina, :
6 Plaintiff, :
7 v. : CIVIL ACTION NO.
8 DAIMLER TRUCKS NORTH : 10-cv-00623-JLL-CCC
9 AMERICA, et al., :
10 Defendants. :

11
12 Computer-aided transcript of the
13 deposition testimony of JACOB L. FISHER, Ph.D.,
14 P.E., taken stenographically in the above-entitled
15 matter before EDWIN SILVER, Certified Court
16 Reporter and Notary Public of the State of New
17 Jersey, at the offices of Goldberg Segalla, LLP,
18 902 Carnegie Center, Suite 100, Princeton, NJ
19 08540, on Tuesday, February 18, 2014, commencing
20 at 10:10 a.m.

21
22 JACQUELINE KLAPP, CCR
23 59 OLD CROTON ROAD
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JACQUELINE KLAPP, CCR - (908) 782-0874

1 I N D E X

2 WITNESS PAGE
3 JACOB L. FISHER, Ph.D., P.E.
4 Examination Mr. Caldwell 6
5
6
7
8
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1 EXHIBITS

2 <u>NUMBER</u>	3 <u>DESCRIPTION</u>	4 <u>IDENT.</u>
5 F-1	Thumb drive	12
6 F-2	Dr. Fisher's binder of various documents	13
7 F-2A	Dr. Fisher's report, dated 12/23/13	19
8 F-3	8 1/2" by 11" color photograph	77
9 F-4	Hand-drawn diagram, entitled "Medina v. DTNA"	81
10 F-5	Tractor model	93
11 F-6	Freightliner brochure of On-Highway Truck Interiors	96
12 F-7	8 1/2" by 11" color photograph entitled "Accident Scene Photos: Cab"	130
13 F-8	8 1/2" by 11" of two color photographs entitled "Police Accident Scene Photos"	140
14 F-9	8 1/2" by 11" color photograph	170
15 F-10	8 1/2" by 11" color photograph of a skull	170
16 F-11	8 1/2" by 11" color photograph, with the decedent's body	179

17
18
19
20
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22
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24
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JACQUELINE KLAPP, CCR - (908) 782-0874

5

EXHIBITS (CONTINUED)

NUMBER	DESCRIPTION	IDENT.
F-12	8 1/2" by 11" color photograph, with the passenger's and driver's seat frame	180
F-13	8 1/2" by 11" color photograph	187
F-14	8 1/2" by 11" color photograph	194

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

6

J A C O B L. F I S H E R, Ph.D., P E, duly sworn, testifies as follows:

EXAMINATION

BY MR. CALDWELL:

Q Good morning, sir. My name is--well, even though we met out in the reception room, my name is Bill Caldwell. I'm here on behalf of the plaintiff in this matter. We're here to take your deposition today.

You understand that?

A I do.

Q And you've had your deposition taken before, so I can dispense with all the preliminary instructions?

A I have.

Q And you've had sufficient time to prepare in this matter with your counsel, so you're ready to proceed?

A I believe so.

Q Okay. I have one very bad habit when it comes to depositions. I have a tendency, when people's voice drop, to conclude that they have finished answering the question, and I sometimes go on to next question when, in fact, they're still thinking. So, if I do that, just tell me

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7

Fisher - By Mr. Caldwell

that you weren't finished. I'm not trying to force you to go faster than you want to.

A Okay.

Q All right?

A Okay.

Q Good.

Also, obviously, this is not a torture session. If at any time you need to stretch your legs, or whatever, just let me know.

Okay?

A Thank you.

Q Good.

You were hired as the biomechanical expert for the defendant in this matter?

A I was.

Q And when were you so engaged?

A I think sometime in 2011.

Q Okay.

A I believe we have provided my retention letter to you, and that would have the precise date.

Q And I was also provided with your time and billing records as you submitted them to defense counsel, and I note from that that there was a nine-hour time charge for April 2013, where

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Fisher - By Mr. Caldwell

8

it appears that you came here.

Do you recall that?

A Correct.

Q Okay. And at that time, who else was present in April of 2013?

A I believe Mr. Cook here; Bobby Hanlon, a partner in his firm; Mr. Granat, who was deposed last week; Mr. Olson, who is the fire causation expert; and a gentleman retired from Daimler Trucks, whose name is eluding me.

Koepke?

Q Okay. And what did you talk about for the nine hours?

A So that nine hours also includes my travel time.

Q What did you talk about for seven hours? And take an hour off for lunch--

A That's right.

Q --what did you talk about for six hours?

A I think each of the experts presented our analyses.

So Mr. Granat presented what he had--what his conclusions were to that point regarding the accident reconstruction.

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Fisher - By Mr. Caldwell

I presented my biomechanical analysis of what I had found.

I think at that point we had reports of plaintiff's experts. We did not--I don't believe they had been deposed yet at that point.

So I had assessed Dr. Manion's report, Dr. Arslanoglu's report. I had some critique of those.

Mr. Olson presented his entire causation analysis. And we just kind of went down the row, and each of us presented--I believe it was Kevan, then maybe Mr. Olson, and then me, I think was the order we went in, and we just presented our stuff.

The attorneys asked us questions, asked us for more detail, whether we could elucidate anything further, and we answered those questions and said this is where we are today with our analysis.

Q Since that time, did you substantially change your analysis?

A Well, one important part of that meeting for me was to understand Mr. Granat's accident reconstruction. For any kind of biomechanical analysis I'm going to do of an

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Fisher - By Mr. Caldwell

automotive crash, I generally start with the vehicle dynamics, which is something I relied on the accident reconstructionist for.

So I came with a certain amount of my analysis done, and I needed to fill in some holes: the directions the truck was moving, how it moved on the bridge, how it moved through the bridge rails, what kind of impacts it sustained in what directions on the bridge, what its orientation was through the fall, what its orientation was upon impact with the ground. That sort of information I came to get from Mr. Granat that day. I had a long list of questions in my head that I went through with him.

So it wasn't just the attorneys asking Mr. Granat questions, but I had my own list of questions that I wanted to go through and build into my report. Obviously, I have a section in my report where I say based on Mr. Granat's accident reconstruction analysis, and then I summarized what I learned from him regarding the vehicle dynamics, and then I build upon that for my biomechanical analysis.

Q Did you go through the Marcoux video at that meeting?

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Fisher - By Mr. Caldwell

A I don't recall whether we went through the whole thing. I have a recollection that maybe we went through parts of it.

Q Okay. Do you recall going through the dash cam footage from Trooper Loyzelle?

A Kevan may have gone through some of that during his presentation. I paid closest attention to what was happening through the bridge rails in the fall to the ground.

Kevan, obviously, had a lot of detail on what happened with the O'Neil vehicle and, you know, the motions of both vehicles on the bridge before they went over. That was not as critical to my analysis, and I may not have paid the best attention to how the vehicles were moving before the accident sequence, the more forceful accident sequence began. So that may have been early in his analysis and presentation. I'm not sure.

Q I see you have a binder on the desk next to you.

Does that constitute your entire file in this matter?

A I don't have everything in here. I have everything on a thumb drive. I have printed out everything that I anticipated pulling out to

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Fisher - By Mr. Caldwell

point out to you, to show you.

There are things, obviously, like the video, which does not come in a printable format, and there are other things that might have been hundreds of pages. So I didn't print out binders and binders of material.

MR. CALDWELL: Let's back up here.

The thumb drive, we'll call F-1.

(Thumb drive received and marked Exhibit F-1 for identification.)

MR. COOK: That's his entire file on the thumb drive. So I think he can explain his work product is generally contained in the binder. But there's correspondence in there, and that's privileged.

MR. CALDWELL: Okay.

MR. COOK: But, you know--

MR. CALDWELL: He was holding it as though he was about to hand it over, and that's why--

MR. COOK: Yeah. That's fine. If he needs it for certain things today, it's certainly here. So I wanted it in here with him, Bill. But as far as getting you a copy, if you want a copy of that, we can get

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Fisher - By Mr. Caldwell

13

you a copy of that, minus the privileged material. So, that's fine.

MR. CALDWELL: Certainly. I'd still like to indicate that the thumb drive is F-1--

MR. COOK: Sure.

MR. CALDWELL: --and I accept counsel's representation that you will sort through it and take out the privileged material. I'm not going to ask you to do that.

So, then, the binder we're going to call F-2.

Let's first let the court reporter do his job.

(Dr. Fisher's binder of various documents received and marked Exhibit F-2 for identification.)

Q F-1 is everything from the day that you were engaged down through the present time?

A Correct.

Q But not including videos.

A The videos are on there as well.

Q Both the Marcoux video and dash cam video from Loyzelle?

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Fisher - By Mr. Caldwell

14

A I believe--I believe it's all on there.

The dash cam video was a--from Loyzelle was a deposition exhibit?

Q It's part of G-3. G-3 we marked at Mr. Granat's deposition the other day is a DVD, which included, among other things, his analysis, the crash report, the still photos, one of which you can see on the TV, the Marcoux video, the dash CAM video.

A The Marcoux video is definitely on here. I don't recall--I don't recall whether the Loyzelle video is on here. If it was a deposition exhibit from Loyzelle's deposition, it's on there. Otherwise, it may not be.

Q All right. So can I just see the binder for a moment, please?

A Absolutely.

Q Thank you.

(Pause.)

A In the front sleeve, I printed out a few other things that I thought might be helpful for our discussions today that I had not previously had in the tabulated--or that might be in the tabulated parts under the analysis, but I

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Fisher - By Mr. Caldwell

15

printed out a separate sheet for our discussion.

Q Okay. Are all the articles in the binder also on--sorry. Let's do it this way.

The thumb drive is all inclusive, and the binder a subset?

A Correct.

Q So anything that I see in the binder I will find ultimately on the thumb drive, less the privileged information that Mr. Cook is going to redact from; is that correct?

A Yes.

Q Okay. I presume that you have testified as an expert before?

A I have.

Q And qualified as an expert in New Jersey?

A Yes.

Q In state and federal court?

A Yes, in New Jersey state court, and I don't know if I've had a federal case in New Jersey, but I have testified in federal court.

Q Civil cases only?

A Yes. In terms of testimony, yes.

Q Well, have you been engaged as a consultant for criminal cases?

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Fisher - By Mr. Caldwell

16

A Yes.

Q For the state or for the defense or both?

A For the defense, I have a case now, and I have assisted the Pennsylvania State Police in some investigations and analyses.

Q For what purpose?

A For potentially bringing criminal charges against someone, for their purposes.

Q For their purposes.

You mean death by auto type case?

A Both of the cases I'm thinking of were death on premises. One was a fall, an alleged fall from stairs, and the other one regarding a recreational vehicle.

Q Have you ever testified for the plaintiff in a civil case involving a tractor-trailer?

A No.

Q Have you ever testified for the plaintiff in an automobile case?

A I have not testified, no.

Q Testifying includes preparing reports and submitting to deposition.

A Oh, sorry.

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Fisher - By Mr. Caldwell

17

Q That's okay. I'm expanding it. You took it correctly to begin with. I was talking about court appearances. Now I'm talking about a broader scope of activities.

Have you testified in deposition for plaintiffs in civil cases?

A Not in depositions. I have prepared reports for plaintiffs.

Q For auto accidents?

A I'm thinking of a pedestrian accident, which is a kind of auto accident.

Q If it involved an auto and a pedestrian--

A Yes.

Q --or a fixed object along the side of the road, yes.

A Yes.

Q Who besides yourself, if anybody, is responsible for the work product in the binder and the thumb drive?

A In addition to me, I was assisted in basic factual review of materials by an engineer who reports to me, Dr. Swathi Ravi. S-w-a-t-h-i R-a-v-i.

Q Anybody else?

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Fisher - By Mr. Caldwell

18

I saw a lot of initials on your time and billing sheet. So--

A Yeah.

I think at one point I discussed some material with John Struble. S-t-r-u-b-l-e. Mr. Struble is an accident reconstructionist in our vehicle practice, who has a lot of familiarity with large trucks, and I was looking through the photos trying to identify different components of the chassis and cap of that vehicle, attachment points for the cab onto the chassis, and it was valuable to have him assist me in identifying parts of the truck and which parts would have matched with other parts when the truck was still assembled.

Q The written report, which we haven't marked yet, do you have a separate copy of your report?

A Yes. In the binder there is a copy.

Q It's not in the front under "Analysis"?

A No, it's not. It just says "Fisher Biomechanics Report."

Q Okay.

A It's about halfway down. Here we

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Fisher - By Mr. Caldwell

19

go. "Biomechanics Report."

(Dr. Fisher's report, dated 12/23/13, received and marked Exhibit F-2A for identification.)

Q Is the report entirely your own work product, from drafting through the end, when you signed it, or are there portions of the report that reflect the work product of your colleagues?

A I was assisted in drafting the factual sections of the report, and, in general, the layout of my report is that there's a summary of various received items, summaries of the police report, summaries of deposition testimony, summaries of the medical records, or the autopsy records, and then the second half of the report is the biomechanical analysis.

Q So is it fair to basically say that beginning on page 3, where it says "Accident Summary," through the top portion of page 10, that that is intended to be a summary of other people's observations and findings?

A Yes. And--

Q So did you go through and verify the information that you have excerpted on various of these pages?

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

20

A I did.

Q So you--

A I did a thorough fact checking and review of everything up through page 10, though some of the initial drafting was done by Dr. Ravi. Subsequent to that, the rest of the report is all directly my writing.

Q So on page 10, at the end of the first pull paragraph, under the section "Biomechanical Analysis," where it says, "I have also relied upon the accident reconstruction of Kevan Granat," tell me, what does that mean when you say that you "relied upon the accident reconstruction"?

A So, as I mentioned earlier, to do a biomechanical analysis, I first need to understand how the vehicle moved, what the vehicle dynamics are, and as I have summarized primarily in the next paragraph, where I say, "Based on Mr. Granat's accident reconstruction analysis," and then I continue on with a summary of how the vehicle moved, based on Mr. Granat's analysis, I'm relying on his accident reconstruction for that part of understanding how the vehicle moved.

Q So you're relying upon, beginning on

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Fisher - By Mr. Caldwell

21

page 10, in the second full paragraph, beginning with the phrase, "Based on Mr. Granat's accident reconstruction analysis," all the ways through to the end of the paragraph on the top of page 11 is that which you are relying upon from Mr. Granat?

A Yes.

Q And then beginning with the paragraph that says, "When a vehicle collides," this is now what? Your interpretation and analysis?

A Yes.

Q And your interpretation and analysis continuous on through the remainder of the report, other than where you're criticizing or analyzing plaintiff's experts?

A Correct.

Let me back up and note that the first full paragraph on page 11 does contain elements that I got from Mr. Granat as well. The tractor-trailer falling approximately 32 feet, that was an assessment he made. The series of small delta-V impacts through the bridge rails, that was something that I got from him. That was a specific question I had for him, in fact on the day that day we met, was how severe those impacts were.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

22

Q Okay. If I could divert you for a moment, then, did you independently calculate how fast the truck was going at the time that it hit the embankment?

A I did do that based on a 32-foot drop in gravity.

Q But you relied on somebody else's 32-foot measurement. You just did the resulting calculation from that.

A Correct.

Q Okay. And so when you calculated 30 miles per hour, did you assume that the truck and trailer were in free fall?

A That assumes--so the free fall comes out to something over 30 miles an hour. I forget the precise number, 32, 33, something like that, miles per hour.

Q Right. You did a chart, it's on the chart, and it shows that 32 miles per hour is slightly more than 44 feet per second.

A Yes.

Q It's 45 point something feet per second.

A Yes. So I did that calculation assuming free fall.

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Fisher - By Mr. Caldwell

23

And then, of course, I had some questions for Mr. Granat regarding how the vehicle went over the bridge, whether there were significant changes that we need to subtract from free fall, you know, whether the--my understanding is that as it goes over the bridge, part of the truck remains in contact with the bridge as part of it is going down. Those sorts of things are going to hinder complete free fall, but we're not going to have a huge change in the speed.

Q Okay. Can we agree on a nomenclature device so that we're not talking at cross-purposes?

I want to talk about the tractor separately from the trailer.

Okay?

And so when you say the truck, conversely, are we talking, then, about the two units together?

I want to make sure when it comes out of your mouth that I understand what you're telling me.

A So let me rephrase what I just said and use the nomenclature--

Q Give me an example right here on page

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

24

11, at the end of the paragraph, it says, "Thus, the truck impacted the ground..."

So are you telling me that you're talking about the tractor or you're talking about the trailer or you're talking about both components together?

A From my purposes, I would say the tractor in this case. That was most important to me looking at Mr. Medina, and that's the part of the vehicle he was in. So we can say the tractor there.

Whether the trailer's speed is impeded because it hangs up on the bridge longer, that's not something I looked closely into. So we could replace that with the tractor.

Q Above that, in the same paragraph, you say, "Subsequently, the tractor-trailer traveled over the edge of the bridge and fell approximately 32 feet to the embankment below..."

So the 32 feet, then, is referring to which component of the vehicle?

A That would be the tractor. The trailer, obviously, extends over a longer distance, with the nose end being farther down the hill and the tail end being higher up the hill.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

25

1 So I'd have to account for a greater variability
2 in height for the trailer.

3 But, again, the tractor is going to
4 be the focus of my interest in this case, since
5 that's where Mr. Medina was located.

6 Q So your analysis begins with the
7 movement of the tractor-trailer unit on the Route
8 91 roadway. Correct?

9 A Yes.

10 Q You did not yourself determine the
11 position of the tractor-trailer unit at whatever
12 you're considering to be point 1?

13 A No.

14 Q You're relying upon Mr. Granat for
15 that?

16 A Correct.

17 Q And so, again, just by way of
18 example, we're still on page 10, when you put
19 something in quotation marks, do you have a cross
20 reference somewhere in all of your material that
21 allows us to find where that quotation mark came
22 from, for example, when it says "'wet, icy, snow,
23 slush'"?

24 A I do not. That would be from the
25 police report. So if we go back--

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Fisher - By Mr. Caldwell

26

1 Q I'm not asking you to find it at the
2 moment.

3 I just want to make sure I understand
4 your nomenclature, because I had the same sort of
5 discussion with Mr. Granat, that that is not a
6 complete sentence, that you're excerpting that
7 from a larger sentence. Correct?

8 A Correct.

9 Q Okay. And so it's not your practice
10 to show that when you excerpt something that you
11 use an ellipsis, the quotation mark, the three
12 dots, then what you're quoting, three dots, and
13 then the quotation mark to indicate that you have
14 lifted it out?

15 A I have this fight with people in my
16 office. The MLA Handbook tells us don't do that,
17 never begin or end a quote with an ellipsis. So
18 I'm a stickler for MLA guidance on that one.

19 Q Okay. Fine. Just like there's APA
20 guidance for other things and--

21 A Strunk & White also says not to do
22 that.

23 Q Strunk & White, right.

24 And again, I just want to make sure
25 that we're talking about the same terminology for

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Fisher - By Mr. Caldwell

27

1 purposes of this deposition.

2 Yaw is the angle of the vehicle in
3 reference to a plane. So if you're the edge of
4 the road, and running across the front of your
5 chest there, and we put something at an angle
6 towards that edge, that's yaw?

7 A Yes. Yaw is rotation in a horizontal
8 plane.

9 Q In a horizontal plane. Okay.

10 And then pitch is what?

11 A Pitch is movement up or down along
12 the long axis of the vehicle. So we sometimes
13 describe it as nose up or nose down or tail up or
14 tail down.

15 Q Okay. And the last rotation is roll?

16 A Is roll, which would be rotation
17 along the long axis of the vehicle. If we drew an
18 axis down the length of the vehicle and then
19 rolled about that axis, that would be roll.

20 Q Do you believe that you have an
21 understanding of how the guide rail, the guardrail
22 system was constructed on the road deck on 91?

23 A Not in a.

24 Q I'm not talking about--

25 A Not in a very detailed

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Fisher - By Mr. Caldwell

28

1 understanding. Just from Mr. Granat.

2 Q Let's talk about a section, as if we
3 were standing and looking through it.

4 So if we were looking at it in a
5 section view, on the one side would be the rails
6 themselves. Correct? The beams of the rails
7 running horizontally and parallel to road.
8 Correct?

9 A Correct.

10 Q Okay. And as we move through the
11 section, the next thing behind that would be the
12 posts that are holding the beams of the rails.
13 Correct?

14 A Correct.

15 Q And what do you understand to be
16 third?

17 A Past that, the photos show what I'll
18 call a chain-link fence--

19 Q Okay.

20 A --strung up on steel posts and rails,
21 we see large sections of that chain-link fence--

22 Q Before we get to what we see in the
23 pictures--

24 A Okay.

25 Q --I just want to understand what's

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Fisher - By Mr. Caldwell

29

1 third.

2 Is the chain-link third, or is the
3 post and rails that hold the chain-link third and
4 the mesh is fourth?

5 A I'm not sure.

6 Q Do you have a sense of how close
7 these components are from the face of the section
8 to the end of the section?

9 So as we go through it from the rail
10 in front to the post to then either another post
11 or the mesh or the mesh and the post, how much
12 distance are we talking about?

13 A I have not tried to quantify that
14 specifically. Looking at the photos, it looks
15 like it's within a few feet from the bridge rails
16 to that fence section.

17 Q What do you understand the function
18 of the mesh fence to be?

19 And when I'm talking about the mesh
20 fence, I'm talking about the mesh and the post and
21 rails that hold that as opposed to the post and
22 the beams that are the guardrail system.

23 A And I don't know that specifically.
24 My guess might be to prevent debris from falling
25 over down into the road below. That's not

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Fisher - By Mr. Caldwell

30

1 something I've looked into or tried to research.

2 Q Well, then, of these four components,
3 it is true, is it not, that the only things that
4 are anchored to the ground are the posts that hold
5 the rails of the guardrail system. Correct?

6 A Anchored to the bridge deck.

7 Q Anchored to the curb.

8 A Yes. I mean, obviously, everything
9 is way above the ground. But yeah, yes.

10 Q So the fence, the chain-link fence,
11 as you're generically calling it, is bolted onto
12 the back of the posts that are anchored to the
13 ground?

14 A I would have to confirm that
15 specifically, but that sounds right--

16 Q Well, wouldn't it make a--

17 A --from the photos.

18 Q Wouldn't it make a difference in
19 terms of the mechanics of what's happening to the
20 truck and what's happening to Mr. Medina inside
21 the truck as to whether or not how things are
22 anchored to the ground?

23 A I know that it was torn loose, large
24 sections were torn loose and pulled to the ground
25 with the vehicle, and that fence is not,

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Fisher - By Mr. Caldwell

31

1 regardless of whether it's anchored to the bridge
2 deck or anchored to the rails or anchored to the
3 post, it's not going to hold the truck--

4 Q I agree.

5 A --up on the deck.

6 And so it's not going to make a huge
7 difference one way or the other. That fence is
8 coming down when the tractor-trailer comes through
9 it.

10 Q Okay. The fence is coming down as
11 the posts are coming down. Correct?

12 A That's my understanding, yes.

13 Q Well, is it fair to describe it in
14 effect, then, as if it's being pulled off its
15 foundation one post at a time as the vehicle is
16 going through it from south to north?

17 A That sounds like a good possibility
18 of what happened. Again, I have not researched
19 that specifically.

20 Q Did you develop any evidence to
21 indicate one way or the other whether or not the
22 fence came down as one long section or it came
23 down in pieces?

24 A I have not looked at that one way or
25 the other.

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Fisher - By Mr. Caldwell

32

1 Q In your summary section, was it your
2 intent to encapsulate all of the material facts
3 that any one of these other investigators,
4 witnesses put down in their writings, or did you
5 selectively pick information?

6 A It was not my intent to encapsulate
7 everything. It was my intent to lay out the
8 pieces that I would then build my biomechanical
9 analysis on.

10 Q One of the issues that you built your
11 biomechanical analysis on was whether or not Mr.
12 Medina was restrained or not restrained in the
13 driver's position. Correct?

14 A I was interested in his restraint
15 status just because that's going to affect the
16 kinematics. So I was looking at whether there was
17 anything about his injuries in the kinematics of
18 the vehicle that could give us insights into
19 whether he was restrained in the vehicle or not,
20 yes.

21 Q Restrained or not, we know what the
22 resulting injuries were that Mr. Medina's body
23 suffered. Correct?

24 A We certainly know what the injuries
25 were, and those helped to provide us some

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Fisher - By Mr. Caldwell

33

1 information on whether he was or he was not
2 restrained, yes.

3 Q Well, the recitation of the injuries
4 that Mr. Medina's body sustained are the result of
5 Dr. Bundock's autopsy. Correct?

6 A Correct.

7 Q And you're not a medical doctor.
8 Right?

9 A I'm not.

10 Q Okay. And so you're in no position
11 to question or challenge her findings from a
12 medical point of view. Correct?

13 A Absolutely not.

14 Q So you're not saying that there were
15 any more rib fractures, for example, than what she
16 identified. Correct?

17 A Correct.

18 Q And you're not saying that there were
19 any more long bone fractures than what she
20 identified. Correct?

21 A Correct.

22 Q And for purposes of your analysis,
23 you're presuming that she is a competent
24 individual and knows her field of expertise.
25 Correct?

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Fisher - By Mr. Caldwell

34

1 A She appears very competent,
2 absolutely.

3 Q So when she says she felt that there
4 was a flash fire, you accept that as being true.
5 Correct?

6 A I'm not sure if that was a medical
7 opinion, but I have no reason to dispute that.

8 Q Well, she was opining on cause of
9 death. Correct?

10 A I would have to take a look at where
11 she said flash fire and in what context.

12 Q The general question is, she was
13 opining on cause of death. Correct?

14 A I think generally she was opining on
15 cause of death, yes.

16 Q Are you opining on cause of death?

17 A No, I'm not.

18 Q Are you opining on survivability of
19 Mr. Medina at the end of the accident sequence
20 when the vehicle comes to rest?

21 A I think there are parts of my
22 analysis which certainly provide insight on
23 survivability. So I'm evaluating the severity of
24 his injuries, which then relate to survivability.

25 Q Is it your opinion that Mr. Medina

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Fisher - By Mr. Caldwell

35

1 survived the crash to the point of where the
2 vehicle, the tractor-trailer is at its final
3 position of uncontrolled rest?

4 A I think it's unclear. And I've done
5 some analysis to back that up, basically.

6 Q Did you consider the anecdotal
7 evidence that Mr. Medina was heard by witnesses to
8 be screaming?

9 A I saw the evidence I believe in the
10 police report, testimony of a Catherine
11 Seminatore, who said she thought she heard
12 screaming, and of a Mike Delesney, who said he
13 heard two distinct voices screaming. I did
14 consider that evidence.

15 Q If, in fact, their recitation is
16 true, then it would be fair to conclude that Mr.
17 Medina survived the accident. Correct?

18 A If Mrs. Seminatore's statement was
19 true and she heard--and what she thought was
20 screaming was indeed screaming, then it would
21 indicate he survived.

22 In terms of what Mr. Delesney heard,
23 we would have to account for a second person.

24 So when you say their statements,
25 referring to both, we would have to account for a

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Fisher - By Mr. Caldwell

36

1 little bit more for Mr. Delesney's statement to be
2 true.

3 Q Well, we have to account for it in
4 the context of what's going on at the time that he
5 arrives at the scene and the tractor is fully
6 engulfed in flame. Correct?

7 A Correct.

8 Q By the way, do you have a fixed--do
9 you think you have a fix on the time line of
10 events here?

11 A I have a general understanding of the
12 time line. I don't know whether you mean second
13 by second in terms of time line--

14 Q No, I'm not saying--

15 A --but I do, the order in which things
16 happened.

17 Q Who do you understand to be the first
18 person at the scene of the crash on the embankment
19 by Williams Street?

20 A I was looking at this the other day,
21 and I forget which of the police officers said, I
22 was the first one on the scene. There may have
23 been other witnesses there--

24 Q Well, that's not what I asked.

25 I asked you, who do you understand to

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Fisher - By Mr. Caldwell

37

1 be the first person, regardless of their title,
2 rank or function, who do you understand to have
3 been first at the scene at the embankment off of
4 Williams Street?

5 A I don't know.

6 Q You do understand, do you not, that
7 Trooper Loyzelle says that it took him 15 minutes
8 from the time that he got the call to the time
9 that he showed up on the scene on the road deck?
10 Correct?

11 A Yes. I saw that.

12 Q Okay. And I presume that you also
13 understand that the first person among first
14 responders who appeared to have arrived on the
15 scene below was the assistant fire chief?

16 A Bucossi.

17 Q Well, Mr. Bucossi is the fire chief.

18 A Oh, I'm sorry.

19 Q The assistant.

20 A Okay. Yeah.

21 Q Yes. Okay.

22 And so do you know how long after the
23 truck came to rest that the assistant fire chief
24 shows up on the scene?

25 A So Mr. Loyzelle--

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Fisher - By Mr. Caldwell

38

1 Q Trooper.

2 A Trooper Loyzelle said that he was the
3 first responder official on the scene. So if it
4 took him 15 minutes to arrive, it would be longer
5 than 15 minutes.

6 Q And you saw that Dr. Bundock opined
7 that she believed that Mr. Medina survived for
8 maybe one or two minutes before he died from the
9 effects of the fire. Correct?

10 A I saw that, yes.

11 Q So, then, if Chief Bucossi had been
12 asked whether or not he heard any screaming, he
13 would have been on the scene way too late to make
14 that observation one way or the other. Correct?

15 A Correct.

16 Q In addition to which the chief said
17 that he was setting up a security perimeter and
18 never really approached the vehicle. Correct?

19 A Correct.

20 Q And the same would be true for the
21 assistant fire chief. He's showing up well after
22 Mr. Medina has expired. Correct?

23 A That would be my understanding, yes.

24 Q By the way, when you viewed the dash
25 CAM, did you make note of the timing, of the times

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Fisher - By Mr. Caldwell

39

1 that were stamped on the video?

2 A I didn't pay any attention to that.

3 Q Let me digress for a moment.

4 Prior to today, have you spoken to
5 anybody else about Mr. Granat's testimony?

6 A Yes. I spoke with Mr. Cook.

7 Q Did you review a transcript?

8 A I have reviewed parts of his
9 transcript that I received yesterday. I didn't
10 get through the whole thing.

11 Q You didn't read all 236 pages?

12 A I did not.

13 Q So your knowledge now today includes
14 whatever information or some of the information
15 that Mr. Granat provided at his deposition?

16 A Yes, some of that. I tried to search
17 for things that I thought might be important for
18 me. I tried to focus my limited time to review
19 what I hoped would encapsulate the key parts. I
20 haven't seen it all, but hopefully I got most of
21 the important stuff.

22 Q Was there any particular portion of
23 Mr. Granat's transcript that you recall jumping
24 out at you?

25 A No. I thought it was pretty

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40

1 consistent with what he had presented last, I
2 believe, April.

3 Q You have in your report on page 5 for
4 Christopher Loyzelle--and tell me if I read this
5 correctly, please--"According to the testimony of
6 Police Officer Christopher Loyzelle, he arrived as
7 the first responding officer at the scene
8 approximately fifteen minutes after the incident
9 had occurred. Officer Loyzelle was taking
10 photographs of the minivan/hearse when he heard
11 quote 'a mini explosion of tanks underneath the
12 bridge.'"

13 Did I read that correctly?

14 A You did.

15 Q Where did you derive the information
16 from that Trooper Loyzelle was taking photographs
17 of the minivan/hearse?

18 A That would come from his deposition.

19 Q And so if he arrived 15 minutes after
20 the call and the call he got was at approximately
21 7:28 in the morning, he arrives no earlier than
22 7:43. Correct?

23 A Correct.

24 Q And so how much after that are you
25 saying he was standing there by the minivan and

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41

1 taking photographs?

2 A I haven't quantified that.

3 Q Well, you do recall reviewing the
4 dash cam. Correct?

5 A I recall that I believe we had the
6 dash cam video when we were here and, as I said,
7 Kevan Granat was very interested in that for his
8 analysis. I was not so much for mine. So I'm not
9 sure to what detail I reviewed the dash cam
10 video.

11 Q Well, you wouldn't have included this
12 particular quotation unless you thought that it
13 had some bearing on your ultimate analysis.
14 Correct?

15 A Well, the quotation was not from the
16 dash cam video but from his deposition.

17 Q I understand that. But you put in
18 here, did you not, "a mini explosion of tanks
19 underneath the bridge" because you were going to
20 then use that fact as part of your analysis.
21 Correct?

22 A I thought that helped to establish
23 the big picture of what was going on here. He
24 arrives on the scene, he hears explosions, he
25 noticed the smoke, and he sees that there's a fire

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Fisher - By Mr. Caldwell

42

1 with a truck below.

2 Q But that's incorrect. That's not
3 what happened.

4 We know that the trooper arrived on
5 the scene. Right?

6 The first thing he does is he arrives
7 on the scene. Correct?

8 A Okay.

9 Q Okay. And then what's the next thing
10 that he does?

11 A Again, I don't have a very long time
12 line drawn out here for Trooper Loyzelle.

13 Q Well, don't you recall that he
14 testified that he was concerned about the traffic
15 backing up on the bridge and about whether or not
16 the bridge could hold the weight of all the
17 vehicles?

18 A That's right.

19 Q And don't you also recall--

20 A The structural integrity of the
21 bridge. I do recall that, yes.

22 Q And so he wasn't immediately going to
23 the minivan/hearse which was beyond the bridge and
24 taking pictures. He was trying to get all the
25 other traffic off of the bridge. Correct?

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Fisher - By Mr. Caldwell

43

1 A Correct.

2 Q And so he spent some period of time
3 that we can establish the details of the time line
4 doing that. Correct?

5 A Correct.

6 Q As a matter of fact, doesn't Trooper
7 Loyzelle say in his deposition that he didn't even
8 notice the tractor-trailer incident until after he
9 had already gone and examined the minivan/hearse?
10 Correct?

11 A I do remember reading that, yes.

12 Q So it's fair to conclude that some
13 period of time has passed before he starts taking
14 pictures?

15 A It makes sense, yes.

16 Q It makes sense. Okay.

17 So what did you attribute his
18 description of the mini-explosions to be?

19 A I did not make any attribution for
20 those. There's a fire--

21 Q Right, there's a fire.

22 A --below. So--

23 Q And there's 18 wheels on this vehicle
24 between the tractor and the trailer. Correct?

25 A Yes.

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Fisher - By Mr. Caldwell

44

1 Q And you've seen pictures of the
2 tractor and the trailer after the fire is out.
3 Correct?

4 A Yes.

5 Q And on the tractor, all of the tires
6 are exploded; are they not?

7 A They're certainly burned up. I don't
8 know whether they exploded or whether they were
9 just consumed in the fire, but they're--

10 Q Well, before they're consumed in the
11 fire, the tires were on the rim, and the tires
12 were encapsulating a volume of air, because that's
13 what keeps the tires inflated. Correct?

14 A Correct.

15 Q And so if the fire causes the air
16 inside the tires to expand, you can end up with a
17 series of mini-explosions from each of the 10
18 tires exploding over time?

19 A You could, yes.

20 Q Well, but you're not concluding that
21 this mini-explosion is described in the fuel
22 tanks, are you?

23 Let's do the converse.

24 A No.

25 Q Not at all.

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Fisher - By Mr. Caldwell

45

A Those kinds of things dealing with the fire and what burned and the timing of that, I should clarify, for time line purposes, that would be left to Mr. Olson. I have not reached any opinions in that regard.

Q Okay. That's fine. I just want to know what your--if you put it in your report, I presume that it has some bearing.

Let's talk about the power line.

A All right.

Q Is the presence of the power line an essential element of your analysis of your report?

A I considered it, but no, it has no particular bearing on my final opinions.

Q All right. So whether there was a power line there or not has no bearing on your analysis; is that correct?

A Correct.

Q And whether the road, as you recited on page 6, under Albert Stringer, whether the road was "icing up in places" is not relevant to your analysis either?

A No.

Q On the same page, where you refer to

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Fisher - By Mr. Caldwell

46

Corporal Marcoux's observations, is your analysis dependent upon the quotation that you have there that says, "in a jackknife position except [the tractor and trailer] were disconnected"?

A To the degree that the final position of the truck helps to establish how it moved, how it was oriented when it struck the ground--

Q How did it strike the ground?

A I'm sorry. I did that. Your voice dropped. I thought you were finished, and I cut you off. I'm sorry. Please continue with your answer.

A No problem.

To the degree that the orientation of the vehicle striking the ground and the opinions that Mr. Granat has given in that regard are reflected in Corporal Marcoux's description of the vehicle orientation, this was important just because it helps to confirm and lay out the entire scene, which is going to then lead into my occupant kinematics analysis, I wouldn't have had to have relied on Corporal Marcoux. I could have relied solely on Mr. Granat. But that consistency was helpful, and I have noted it there.

Q When you recite here that "He

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Fisher - By Mr. Caldwell

47

observed Mr. Medina's body in the cab's sleeper area," since we're only talking about Corporal Marcoux, you're referring to his observation?

A Yes.

Q And you're deriving that from having watched the video where Corporal Marcoux is walking around and he points at a pile of stuff on the ground at one point and says, "This looks like the body"?

A So I did see that video where he says that. This summary would be of his deposition.

Now, of course, in his deposition there is discussion of his handwritten--or of his dictated notes from the video. So, ultimately, the source of that may have been the video, which was then incorporated into the deposition, and this summary of the deposition now includes his finding of where the body was located.

Q In the next sentence you say, "Corporal Marcoux also captured on the video..."

So we know where the source is. This is only from the video that follows. Correct?

A Yes.

Q "...blood and 'red matter' on the piece of the fence that interacted with the

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Fisher - By Mr. Caldwell

48

tractor-trailer and fell with the vehicle to the hill below."

First of all, did I read that sentence correctly?

A You did, yes.

Q The quotation for the words "red matter," where are you deriving that from?

A That would have been--everything here would have been from his deposition. Whether that was--whether the deposition transcript was quoting something he had said verbally in the video, again, because we're discussing the video here in the deposition, I'm guessing that it's a quotation brought forward from the video through the deposition transcript. But I was reading this from the deposition transcript when I put that in quotes.

Q So are you relying upon his interpretation that the fence interacted with the tractor-trailer, or did you arrive at that conclusion independently?

A This would all be summarizing Corporal Marcoux's deposition at the time. So at this part of the report, it would not be my interpretation, but what he described in his

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Fisher - By Mr. Caldwell

49

1 deposition.

2 Q And so would that also be true of
3 Albert Stringer and Elizabeth Bundock, that the
4 quotations that you have in your report are
5 derived from their deposition testimony?

6 A Correct.

7 In fact, if we go back to the top of
8 page 5, there's a heading that says "Deposition
9 Testimony"--

10 Q Right.

11 A --and then a subheading for each of
12 people. So anything quoted in here or paraphrased
13 and, therefore, not in quotations would all be
14 sourced from their deposition transcripts.

15 Q Okay. So everything from the top of
16 page 5 through almost the bottom of page 8 is all
17 derived from deposition testimony.

18 A Correct.

19 Q For Dr. Bundock, you do recall
20 reading in her deposition that she concluded that
21 the injuries that she found, the rib fractures,
22 lacerated liver, that neither individually nor
23 collectively would have been sufficient to have
24 caused Mr. Medina's death.

25 Do you recall that?

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Fisher - By Mr. Caldwell

50

1 A I believe her testimony was that,
2 absent the fire, his injuries would have been
3 fatal. I'm not sure if the specific collection of
4 injuries we're talking about, individually or
5 collectively, include everything that she
6 summarized in her overall opinion.

7 Let me take a quick look.

8 (Pause.)

9 Q Where are you looking, so I can
10 follow along?

11 A I'm sorry. I'm on pages 7 and 8 of
12 my report.

13 "She...believed that Mr. Medina
14 would likely have died from the blunt trauma his
15 body received in the accident."

16 I have that in the first--I believe
17 it's the first full paragraph, a short paragraph,
18 on page 8.

19 If you like, I can take a look and
20 probably source that back to her testimony.

21 Q Well, let's go to page 102.

22 You've got page 102?

23 A I don't have the full transcript
24 here.

25 Q Okay.

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Fisher - By Mr. Caldwell

51

1 A If you can show me afterwards.

2 Q Sure.

3 Well, I will represent to you that
4 I'm reading from Dr. Bundock's deposition,
5 beginning, actually, at page 103, where I'm the
6 questioner.

7 "So let's begin where perhaps we left
8 off here on the final autopsy report with the
9 "Final Pathological Diagnoses," right? Is 1(A)
10 in and of itself sufficient to have caused Mr.
11 Medina's death, in your opinion?"

12 And you understand 1(A) is her
13 listing of the various injuries. Correct?

14 A Yes.

15 Q And then Ms. Vincent, who was
16 representing the doctor, said, "Again, I'm just
17 putting the objection on that she put the cause of
18 death as 'blunt trauma of torso and thermal
19 injuries.' You are getting more into the doctor's
20 expertise. That's--I'm just putting that on the
21 record."

22 I responded, "Are you--are you
23 directing your--your doctor not to answer? I need
24 to know, please."

25 "MS. VINCENT: No, I'm--

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Fisher - By Mr. Caldwell

52

1 "MR. CALDWELL: Okay. Your
2 objection's noted.

3 "QUESTION: Thank you, Doctor, would
4 you please answer the question?

5 "ANSWER: 1(A) in and of itself may
6 not be sufficient to cause death."

7 Do you recall reading that?

8 A And I see 1(A) in her autopsy report
9 is laceration of the abdominal wall--

10 Q Right.

11 A --with partial evisceration of
12 intestines--

13 Q Right.

14 A --with 1(B) through (F) being
15 additional blunt trauma.

16 Q Right. So the next question is:

17 "QUESTION: Okay. How about 1(B),
18 in and of itself sufficient to cause Mr. Medina's
19 death?

20 "ANSWER: If you'd like, we can speed
21 this up by saying each of those, (A) through (F),
22 in and of themselves, in isolation, may not be
23 sufficient alone to cause death."

24 A Might not be sufficient to cause
25 death, each of them in isolation.

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Fisher - By Mr. Caldwell

53

1 Q Each of them in isolation.
 2 Are you concluding differently?
 3 A No, I'm not.
 4 Q And 1(A) is which injury that you
 5 refer to?
 6 A 1(A) in her final report of autopsy
 7 is laceration of the abdominal wall, with partial
 8 evisceration of intestines.
 9 Q Laceration is different than
 10 puncture. Right?
 11 A Laceration is a tearing of tissue.
 12 Q Right.
 13 A Puncture can cause a laceration.
 14 Q Okay. But generically speaking, when
 15 we talk about laceration, we're not talking about
 16 puncture wounds?
 17 A Laceration would be a broader
 18 category. Puncture can be a subset of
 19 lacerations. Punctures can cause lacerations or
 20 have lacerations as part of their overall wound.
 21 Q And we also have crushing injuries.
 22 Correct?
 23 A Yes.
 24 Q You didn't include that the 1(A)
 25 injury was the result of a crushing injury, did

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Fisher - By Mr. Caldwell

54

1 you?
 2 A No.
 3 Q Did you conclude that it was the
 4 result of a laceration?
 5 A Well, 1(A) is a laceration.
 6 Q Okay. Well, what is the object
 7 you're saying is the cause of the--sorry. Let me
 8 back up.
 9 What are you saying caused that
 10 laceration?
 11 A I understand that this was caused, in
 12 my opinion, by the post and fence, from the
 13 chain-link fence, which caused this injury
 14 to--which caused the penetrating injury, a
 15 laceration of the abdominal wall and the
 16 evisceration of intestines through that opening in
 17 the abdominal wall.
 18 Q And what facts are you relying upon
 19 to arrive at that conclusion that it's the fence
 20 post that caused this 1(A) injury?
 21 A There are a couple of different
 22 things.
 23 One is that we have this tissue and
 24 blood identified by Corporal Marcoux in his video
 25 on the fence. We can see it in the video. It

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Fisher - By Mr. Caldwell

55

1 certainly appears to be tissue and blood. It's
 2 still very red. It's still, based on my
 3 experience, dealing with tissue and blood. It
 4 doesn't stay red very long. After it's been
 5 exposed and oxidizes in the air, it starts to get
 6 brown and dirty. So it looks like it's still
 7 relatively fresh.
 8 Q What does that mean, "relatively
 9 fresh"? One minute? Five minutes? Ten minutes?
 10 A Within a few hours.
 11 Q Within a few hours.
 12 A Yeah. It's not something that
 13 was--it's not something that's been on the fence
 14 for a couple of days, and the fence hasn't been on
 15 the ground for a couple of days at the location
 16 where Corporal Marcoux identified this red matter
 17 and blood on it.
 18 So we have this tissue, which is
 19 within a few hours of being fresh on this fence
 20 post, which is at a distance from the truck. The
 21 cab is separated from the chassis, to the right
 22 side of the chassis. On the left side of the
 23 chassis we have this piece of fencing with the
 24 tissue on it.
 25 The only identifiable source of that

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Fisher - By Mr. Caldwell

56

1 tissue is Mr. Medina. So now we have physical
 2 evidence of tissue on a piece of fence, which is
 3 separated from the truck by a distance, and on top
 4 of that is not charred or damaged by the fire in
 5 any way.
 6 Q Why is all this important to your
 7 analysis?
 8 If it's not a fatal injury, what
 9 difference does it make?
 10 A Well, Dr. Bundock said none of--any
 11 of these in isolation might not be sufficient to
 12 cause death. So she has not ruled any of these
 13 out as fatal injuries, just to clarify that point
 14 first, in isolation.
 15 But, furthermore, these kinds of
 16 injury when you have--once you start to stack up
 17 serious injuries combined, you start to increase
 18 the risk of fatality. So--
 19 Q Well, that's what the AIS says.
 20 A So I can't--or parts of the AIS,
 21 yes. And so even if we go through--there's the
 22 proverbial death by a thousand paper cuts. If we
 23 rule out each of those paper cuts as nonfatal and
 24 we move through all thousand of them having ruled
 25 each one out, then we have no death. But, as we

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Fisher - By Mr. Caldwell

57

1 know, you can have cumulative damage.

2 And so I can't just say, Well,
3 nonfatal, so let's skip that, it's not important
4 to my analysis, and move on.

5 I think this is an important part of
6 an analysis, because it shows two things. It
7 shows that we have penetration of the cab and of
8 Mr. Medina's body by this fence post, which
9 collects tissue and then gets stripped back out of
10 the truck and comes to a final rest at a distance
11 from where Mr. Medina's body came to rest.

12 Q But the only persons--let me back
13 up.

14 Corporal Marcoux is pointing out and
15 he says he thinks it looks like blood.

16 Other than Corporal Marcoux, among
17 the professionals that are representing working
18 for the defendant here, who came to the conclusion
19 that, in fact, it was blood and not something that
20 Corporal Marcoux just misidentified?

21 Did you arrive at that conclusion
22 independently that it was blood and body matter,
23 independently of what Corporal Marcoux says?

24 A I took a look, and I certainly agree
25 with his assessment.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

58

1 Q Well, at the nine-hour meeting, who
2 came up with--whose analysis turned on the fact
3 that there was blood and matter on the fence?

4 A That would be my analysis.

5 Q Your analysis.

6 A Yes.

7 Q And so your analysis of the blood and
8 matter on the fence is not in any way related to
9 which way the vehicle was turning as it came off
10 the road?

11 A Well, putting together when that
12 interaction occurred needed to be matched up with
13 the kinematics, the vehicle dynamics that I'm
14 getting from Mr. Granat. But we certainly see
15 tissue on that fence which we know is coming
16 from--it would be a stretch to attribute it to
17 anything other than Mr. Medina. So we know that
18 that has penetrated the cab and Mr. Medina at some
19 point.

20 Now, putting together how and when
21 requires some understanding of the vehicle
22 dynamics which I got from Mr. Granat. But I came
23 to the meeting that day saying this penetrated the
24 cab and Mr. Medina's body.

25 Q Would your analysis of what you saw

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Fisher - By Mr. Caldwell

59

1 on the Medina vehicle depend at all on which way
2 the vehicle was turned as it left the road deck?

3 A I think I would still conclude
4 that--I would be forced to conclude that this
5 piece of fence penetrated the cab and penetrated
6 Mr. Medina's body, the fact that the truck, his
7 right side leading going through those rails, and
8 that his wound is to the right side of his body,
9 and knowing that he's going to be moving towards
10 the right side of the vehicle. And when we look
11 at evidence of the vehicle on the ground, we see
12 that the cab is separated from the chassis in a
13 way that we have the ash, where it continues to
14 burn on the ground, demarcates the left side of
15 the truck pretty well, but over on the left side
16 we kind of have scattered ash, probably from
17 burning fiberglass structures, leading all the way
18 back to the chassis.

19 All of those things, all of those
20 things together help to build this consensus of
21 the truck going right side leading through these
22 rails, penetration of the right side of the cab, I
23 hadn't concluded on the day of our meeting that it
24 was--that the fence had penetrated the right side
25 of the cab. I knew it had penetrated the cab and

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Fisher - By Mr. Caldwell

60

1 Mr. Medina.

2 Understanding Mr. Granat's analysis
3 of how the vehicle was oriented and looking at the
4 physical evidence of where the ash field was,
5 where the debris field was on the ground certainly
6 matched up the pieces very well, that we have the
7 right side of the truck coming into this fence,
8 the fence penetrating the right side of the cab,
9 coming into Mr. Medina, and then stripping back
10 out as the truck fell and coming to rest at a
11 distance from where the cab and the chassis were.

12 Q You understand that plaintiff's
13 theory is that it was the left side of the tractor
14 that was leading over the edge. Correct?

15 A That's my understanding, yes.

16 Q Okay. Assume that that's true,
17 hypothetical question, assuming that that's true,
18 tell me when in the course of the vehicle going
19 off the road that this fence post penetrates the
20 cab, pierces Mr. Medina's body, exits his body,
21 and then gets separated from where his body ends
22 up.

23 A It certainly becomes a much more
24 difficult assignment to match those pieces up. So
25 I haven't thought that through. If I'm--if I'm

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61

1 committed, as I am, to this being blood and tissue
2 from Mr. Medina on this post, and that's
3 associated with the abdominal laceration, I
4 haven't done the analysis to say, Well, now I have
5 to get that fence into the truck and putting Mr.
6 Medina's body with the truck oriented together. I
7 haven't--I haven't done that analysis.

8 Q But that also presupposes what you're
9 seeing is blood and body matter and not something
10 else. Correct?

11 A Yes. As I said, I'm committed to
12 that finding.

13 Q You're committed to that finding.
14 But if it's not blood and it's not body matter,
15 then that analysis is wrong.

16 A Yes.

17 Q It has to be wrong.

18 A So that finding is wrong, that
19 finding that it's blood and tissue on the fence.
20 And now we also have to come up with an
21 alternative mechanism for the abdominal laceration
22 and the intestinal evisceration. So we're left
23 with--we're left with two holes now.

24 Q Okay. There was a trained medical
25 person at the scene shortly after the accident,

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Fisher - By Mr. Caldwell

62

1 the deputy ME. Right?

2 A That's my understanding, yes.

3 Q Did you see any indication that
4 Corporal Marcoux or anybody else brought this,
5 quote, blood and body matter material to the
6 attention of the deputy ME?

7 A I didn't see that.

8 Q Is there anything in the file that
9 demonstrates that a sample was taken of the
10 material off of the fence?

11 A Not that I saw.

12 Q Is there anybody else among all of
13 the other troopers, first responders, medical
14 examiners who agree with Corporal Marcoux?

15 A I didn't see that anyone else
16 noticed--

17 Q Well, didn't--

18 A --to be in a position to agree or
19 disagree.

20 Q Well, didn't Corporal Marcoux
21 describe his function as being the person who was
22 walking around and documenting things so that
23 later the accident reconstructionist and other
24 people could comb through his video and try to
25 figure out what really happened?

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Fisher - By Mr. Caldwell

63

1 A Yeah. And, unfortunately, that
2 appears not to have happened. No one commented on
3 it one way or the other.

4 Q So either nobody else reviewed
5 Corporal Marcoux's video and it just went into the
6 archives and nobody else gave a damn about doing
7 an analysis. That's one choice, right, going down
8 the decision tree?

9 One choice is Corporal Marcoux says
10 that he thinks it's blood and then it disappears
11 into oblivion. Correct?

12 A And maybe not so much because no one
13 gave a damn about doing an analysis because it was
14 just an oversight. That's--

15 Q Okay. The other choice is that
16 somebody else reviewed it and disagreed with him.
17 Correct?

18 A Yes. So I didn't see any indication
19 of disagreement in the same way that I saw no
20 indication of agreement. I just saw no mention of
21 it by anyone else.

22 Q There's no mention that anybody else
23 actually reviewed Corporal Marcoux's video.
24 Correct?

25 A At least not that part of it. I

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Fisher - By Mr. Caldwell

64

1 didn't see anyone, again, agreeing or disagreeing
2 or even mentioning that Corporal Marcoux had
3 documented this.

4 Q And so you're also assuming that the
5 bowel evisceration is a demonstration of premortem
6 injury. Correct?

7 A Yes.

8 Q And that the only source for that
9 injury is premortem. Correct?

10 A Yes.

11 Q In your entire professional
12 experience, you have no other knowledge that would
13 lead to another alternative explanation of that
14 injury?

15 A Where it is located on the side of
16 his--

17 Q Yes.

18 A Through the transverse and the--the
19 layer of transverse abdominal wall muscles and two
20 layers of oblique muscles?

21 Q Right.

22 A No.

23 Q You have never read or heard anything
24 at all that would indicate that that is the result
25 of fire damage to the body?

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Fisher - By Mr. Caldwell

65

1 A There have certainly been bowel
2 herniations, not through the thick triple layer of
3 transverse wall muscles.

4 Q You're absolutely certain about that?

5 A If you have a paper, I'd certainly be
6 happy to take a look, but I've seen these kinds of
7 bowel herniations.

8 Q I never thought you were going to
9 ask.

10 Have you ever seen the Atlas of
11 Forensic Pathology?

12 A Not that one.

13 Q Not that one.

14 So Atlas of Forensic Pathology, by
15 Joseph A. Prahlow, P-r-a-h-l-o-w, and Roger W.
16 Bayard, B-a-y-a-r-d--I don't want to mangle these
17 gentlemen's names--by Humana Press, and Mr.
18 Prahlow is from the Indiana School of Medicine at
19 Notre Dame, and Mr. Bayard is from the Medical
20 School at the University of Adelaide in
21 Australia.

22 And in this textbook, one of the
23 sections is Section 19, entitled "Burns and
24 Fire-Related Deaths," beginning at page 753.

25 So, on this particular page, 757,

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Fisher - By Mr. Caldwell

66

1 there's a photograph among the other evidence
2 that's very similar to the one that appears in
3 this book of the head, with the dentition, with
4 the teeth. Correct?

5 A Yes, except that the calvarium is
6 intact in the text book.

7 Q I said "similar," yes.

8 Actually, I can't do this upside
9 down.

10 By the way, was Mr. Medina's body
11 found in a prone or supine position?

12 A Prone.

13 Q And who made that finding?

14 A I noted that myself--

15 Q This is the medical examiner.

16 A --in the photographs.

17 Q Right. But the person who recorded
18 that information was the assistant medical
19 examiner.

20 A Okay.

21 Q I'm still looking for the other one.

22 On page 781, this photograph is more
23 similar to the photograph from the scene where the
24 calvarium is missing.

25 A Correct. From the part of the

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Fisher - By Mr. Caldwell

67

1 calvarium that we can see, yes.

2 Q Right. And that is considered a
3 usual and common fire-induced postmortem condition
4 of the body?

5 A Well, I would back up to say there
6 are studies that show how long it takes for
7 different parts of the body to burn, and primarily
8 done during cremations where they have
9 investigated how long it takes for different parts
10 of the body to disintegrate and that crematory
11 temperatures of 1,100 to 1,500 degrees to turn the
12 calvarium to ash requires 30 to 45 minutes.

13 So this particular case had a fire
14 that went on for a pretty long period of time.
15 The firemen did not want to approach it because of
16 the live power line. So the fire burned longer
17 than it might have burned in a lot of cases.

18 So when you say a usual circumstance,
19 I would say maybe a usual circumstance is a very
20 hot fire that burns for 30 to 45 minutes.

21 Q Right. Well, that's what Dr. Bundock
22 described, a flash fire with a hydrocarbon base
23 being diesel fuel, and we all know that the fire
24 was allowed to burn for 30 or 40 minutes, and the
25 fire company just stood by protecting their own

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Fisher - By Mr. Caldwell

68

1 self-interests, and, arguably, not a bad thing to
2 do, and just allowed the fire to rage. Correct?

3 A Well, again, it was 30--given that
4 the fire burned for 30 to 45 minutes, that finding
5 is consistent.

6 Q And so on page 775, figure 19.37, it
7 says, "A portion of the intestines protrudes from
8 a thermally-induced defect in the abdomen"; does
9 it not?

10 A I'm trying to orient where we are.

11 Q Please just start with that's what
12 the photograph is entitled and I read the
13 narrative description of the photograph
14 correctly.

15 A It does, yes.

16 Q Thank you.

17 Would you care to reconsider your
18 opinion that the only source of this laceration on
19 the right side of Mr. Medina's body was from the
20 fence only and nothing else?

21 A So now we have another way of
22 accounting for how we could possibly get the
23 injury. So that's part one.

24 Q Well, all right, but do you agree
25 with--

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Fisher - By Mr. Caldwell

69

1 A Another hole we need to fill is we
2 need to come up with an alternative source for the
3 tissue on the fence.

4 Q One hole at a time.

5 All right?

6 A Okay.

7 Q All right. So you agree now that you
8 could have a postmortem-induced evisceration of
9 the bowel based on what we've seen in this
10 textbook?

11 A Yes.

12 Q So, then, your conclusion in your
13 report that the only way that this could have
14 happened is your version of events is incorrect?

15 A Well, let me back up again and say--

16 Q No, no, don't back up. Answer the
17 question.

18 A No, that's incorrect.

19 Q Let's find in your report where you
20 conclude that.

21 On page 12, the second paragraph, and
22 correct me if I read it improperly, "Mr. Medina
23 also had a large laceration of his right abdominal
24 wall with partial evisceration of the intestines."

25 Did I read that correctly?

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Fisher - By Mr. Caldwell

70

1 A Yes.

2 Q The next sentence says, "This injury
3 was caused by a section of woven mesh fence and a
4 steel fence post, which penetrated the cab of the
5 tractor and Mr. Medina's body during the truck's
6 fall from the bridge."

7 Did I read that correctly?

8 A Yes.

9 Q I know there's another reference in
10 your report about this.

11 A Same paragraph, continuing down.

12 Q Yes. Thank you.

13 As a matter of fact, I started that
14 before. So, more in the middle of the paragraph
15 it says, "The presence of this 'blood and matter
16 on fence' as identified by Cpl. Marcoux, which was
17 clearly not charred like the rest of Mr. Medina's
18 body and was located remote from the cab,
19 indicates that the fence penetrated both the cab
20 and Mr. Medina's body at some point during the
21 fall from the bridge, but separated from his body
22 and cab prior to final rest on the embankment."

23 Did I read that correctly?

24 A Correct.

25 Q And you continue, "Although several

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Fisher - By Mr. Caldwell

71

1 charred 'open' wounds were caused postmortem by
2 the fire, the only open wound to Mr. Medina's body
3 clearly identifiable as premortem is the large
4 abdominal tear and intestinal evisceration,
5 associating this penetrating injury most closely
6 with the tissue Corporal Marcoux identified on the
7 fence." Correct?

8 A Yes.

9 Q So back to four or five questions
10 ago, you concluded that the only way that this
11 injury could have happened was premortem by the
12 fence penetrating the cab, penetrating Mr.
13 Medina's body, exiting his body and ending up on
14 the ground on the opposite side from where the
15 body was found. Correct?

16 A Yes.

17 Q Yes.

18 So we still have the one hole.

19 So there is another medically
20 accepted and recognized alternative to your theory
21 of how that injury occurred. Correct?

22 A Yes.

23 Q So what's the other hole you want to
24 fill?

25 A We have to put the tissue on the

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Fisher - By Mr. Caldwell

72

1 fence.

2 Q Tissue on the fence.

3 Well, of course, we have to
4 presuppose that it's tissue. And so if it's not
5 tissue, then I don't have to put it there. I
6 don't have to explain tissue.

7 So other than your visual
8 identification of this photograph--

9 A In Corporal Marcoux's--

10 Q No. He didn't say matter. He didn't
11 say body matter.

12 Want to go to the video and see what
13 he actually said?

14 A I think what he said was blood and
15 matter on fence.

16 Q He didn't say body matter, did he?

17 A No.

18 Q No. Okay.

19 A I'm not sure what kind of matter he
20 meant along with blood. But we could ask him
21 later, I'm sure.

22 Q We may get an opportunity to do
23 that.

24 So we know now that Mr. Medina's body
25 was found prone--

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Fisher - By Mr. Caldwell

73

A Yes.

Q --facedown.

A Yes.

Q All of the photos that we have in this case from the police show Mr. Medina's body in a supine position. Correct?

A No. In fact, most of them show him prone, until the very end, when they rolled him over into the bag.

Q Okay. So you're saying that the pictures before they removed the body, or started to remove the body, those all support the contention that the body was found prone, facedown?

A They clearly demonstrate that he's prone.

Q Does the fact that his body was found facedown have any bearing on your kinematic analysis?

A No. That would be consistent with my analysis.

Q The accident scene on the Williams Street embankment, we can analogize it much to being like an archeological dig. Right?

A We could.

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Fisher - By Mr. Caldwell

74

Q Okay. There's various layers of things that have happened over time?

A Yes.

Q Okay. And even though the time frame is compressed, the ground is the base. Right?

A Yes.

Q Okay. And then we have layers that come up from the ground.

A Yes.

Q So we--

A I smiled because I used this analogy earlier today.

Q Okay.

A We're on the same page. No, not with you. With Mr. Cook.

Q Oh, okay. I was going to say, I didn't think my memory is that bad.

A I was talking about the grid work they lay out to identify the bits and pieces of the Titanic--

Q Right.

A --and going through the grids to find where everything came to rest.

Q Okay. So in the exhibit that was marked G-9 at Mr. Granat's deposition--

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Fisher - By Mr. Caldwell

75

A Yes.

Q Okay.

A This is the cable.

Q Very good.

Well, first of all, we see the ground.

A We do, yes.

Q Okay. And then on top of the ground, we see the cable.

A Yes.

Q Okay. And then on top of the cable, we see a portion of the remains of the tractor cab.

A Correct.

Q And in this particular orientation, as a matter of fact, we're looking at the back of the cab. Correct?

A We are.

Q All right. And the center of the photograph is where the back of the cab would come across and rest on the rails to get into the port, partially.

A Yes.

Q So there's no doubt, using our archeological analysis here, that the cable is

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Fisher - By Mr. Caldwell

76

under the cab.

A Correct.

Q So the cable, no matter how it moved in time and space, it had to come down before the cab.

A Correct.

(A short recess was taken.)

BY MR. CALDWELL:

Q I believe we were doing our archeological cable and then the cab.

Ultimately, for your analysis, it didn't matter whether there was a cable there or not, electrified or not, it was the injuries.

A Right. As I said, I considered the cable. But ultimately, based on things like the location of the cable and the archeological dig, I ruled it out as being an important contributor to the injuries for my analysis.

Q So did you read through enough of Mr. Granat's deposition to understand that he, my choice of words, acknowledged that the wire mesh fence is coming off as each of the fence--as each of the rail posts are being sheered off of their base?

A I didn't get to that part.

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Fisher - By Mr. Caldwell

77

1 Q Okay. Then do you agree functionally
2 that the vehicle is traveling from south to north,
3 the restraining system is on the west-hand side,
4 okay, so as the vehicle is going through the
5 restraining system, it's taking it off also from
6 south to north?

7 A Correct.

8 Q And that it's a system, if the two
9 fences are bolted together.

10 As a matter of fact, you can see
11 that--sorry.

12 MR. CALDWELL: I don't have a
13 number on that one.

14 (8 1/2" by 11" color photograph
15 received and marked Exhibit F-3 for
16 identification.)

17 Q F-3, on the left-hand side, we can
18 see the eastbound side configuration that shows
19 the same debris fence.

20 A Yes.

21 Q So we can also conclude from that
22 that the rail of the debris fence is lower than
23 the top rail of the fence, the guardrail. Right?

24 A Yes.

25 Q Yes. Okay.

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Fisher - By Mr. Caldwell

78

1 A At least on the opposite side.

2 Q At least on the opposite side.

3 A Presumably, if they were symmetric,
4 that would have been the part taken down.

5 Q It's unlikely that they would build
6 it differently. There's four locations there.
7 There's the east side, there's the west side of
8 the northbound, there's the east side of the
9 southbound, and then there's the west side of the
10 southbound, all of which were protected in similar
11 fashion.

12 A It makes sense.

13 Q It makes sense.

14 So in G-11, the fence post that
15 you're talking about in the still photograph--

16 A Yes.

17 Q --is the one on the far right-hand
18 side of the photograph with the open portion of
19 the pipe facing us.

20 A Correct.

21 Q And there's actually two pieces of
22 pipe there. One of them is the vertical member
23 and one of them is the horizontal member for the
24 chain-link fence, for lack of a better name.

25 A That appears to be the case. I have

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Fisher - By Mr. Caldwell

79

1 not tried to confirm that. But, yes, there are
2 two steel tubes there together. Presumably, one
3 was a post and one was a horizontal piece or a
4 diagonal piece. I'm not sure what kind of cross
5 bracing it had. I haven't studied that
6 structure. But, yes, there are two pieces of pipe
7 there.

8 Q Okay. And, of course, the remains of
9 the debris fence are also still attached to the
10 post and the rail.

11 A It appears that it could be, sure.
12 I'm not going to say absolutely sure looking at
13 that photo, but that appears to be the case.

14 Q Okay. Now, in your report--and I
15 presume, then, that you relied on Mr. Granat,
16 because you say in your report that there's also a
17 series of impacts from the guide rail posts as the
18 tractor is penetrating through them.

19 A Yes.

20 Q And Mr. Granat described for me--and
21 Bob can correct me if I misdescribe it--that
22 essentially each of these impacts from the posts
23 occurred at a different point along the side of
24 the truck, because the truck is moving through
25 space and the posts are getting ripped up by the

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Fisher - By Mr. Caldwell

80

1 curb and--

2 A Yes.

3 Q Yes.

4 A My understanding is that the
5 orientation of the truck is changing as it goes
6 through the posts. So we have a row of posts, and
7 the truck is proceeding through that row of posts
8 with the--

9 Q We're going to--go ahead. Finish
10 your answer.

11 A --with the driver's side--sorry, with
12 the passenger's side leading, and it becomes more
13 rearward--the force becomes more rearward oriented
14 as the truck rotates counterclockwise more
15 continuing through that series of posts and
16 because the tractor is continuing leftward
17 relative to--

18 Q Westerly.

19 A Westerly, yes. It's a better frame
20 of reference.

21 Q Right.

22 A --continuing westerly over the edge
23 of the bridge that's going to cause those impacts
24 to be farther down the side of the truck.

25 Q Did you consider the debris field

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Fisher - By Mr. Caldwell

81

1 that was located northeast of the opening in the
2 rails to have any bearing on your biomechanical
3 analysis?

4 A To the degree that I'm relying on Mr.
5 Granat, and I'll rely on him, and he can do the
6 interpretation of that. But no, I have not
7 independently analyzed that.

8 Q That's the point.

9 So it makes no difference that there
10 is debris northeast of the site or what is in that
11 debris field. Correct?

12 A Correct.

13 Q Just so we're clear.

14 So it matters not to you whether
15 there's a license plate, batteries, the left-hand
16 step, a lens from the truck all in the debris
17 field northeast of the site?

18 A Correct. That's not part of my
19 analysis.

20 MR. CALDWELL: Next number, please.

21 (Hand-drawn diagram, entitled "Medina
22 v. DTNA," received and marked Exhibit F-4
23 for identification.)

24 Q Sir, I'll represent to you--and I'm
25 sure that Mr. Cook will not accuse me of

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Fisher - By Mr. Caldwell

82

1 misrepresenting anything--that this is a print
2 from Mr. Granat's report that shows a portion of
3 his reconstruction involving the movement of the
4 truck along the highway.

5 All right?

6 So if you want to take a moment to
7 look at that to get yourself oriented.

8 (The witness complies with the
9 request.)

10 Q So, on F-4, the bottom of the diagram
11 is the northbound lane of the interstate curving
12 around to the right. Correct?

13 A Correct.

14 Q And the object that's depicted over
15 the lanes is the tractor-trailer. Correct?

16 A Correct.

17 Q And so based on what you told me
18 before, it matters not whether or not the
19 individual placements of the tractor-trailer are
20 correct or not.

21 So for Position No. 1, starting at
22 the far left-hand side of the diagram, your
23 analysis is not dependent upon whether or not that
24 depiction of the tractor-trailer at that location
25 is correct or not.

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Fisher - By Mr. Caldwell

83

1 A At Position 1, no.

2 Q The next one is Position 2.

3 Is your analysis dependent on that?

4 A No.

5 Q Is your analysis dependent on
6 Position 3?

7 A No.

8 Q Is it dependent on Position 4?

9 A No.

10 Q How about 5?

11 And 5, for purposes of the question,
12 means we're already showing the tractor-trailer in
13 contact with the--I'm sorry, with the tractor
14 being in contact with the westerly side of the
15 bridge.

16 A Yes. This is starting to get
17 important for my analysis now.

18 Q Okay. So 5 is important?

19 A Yes. And--

20 Q And 6 is important?

21 A 6 is important.

22 Q 7 is important?

23 A Yes.

24 Q 8?

25 A Yes.

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Fisher - By Mr. Caldwell

84

1 Q And 9?

2 A Yes.

3 Q Okay. The part of your analysis that
4 you say is important is the fact that Mr. Medina
5 was unrestrained in the driver's position?

6 A That's certainly consistent with my
7 findings.

8 Q All right. So, in Position 1, it's
9 your opinion, though, that Mr. Medina was driving
10 this vehicle in an unrestrained manner, when I say
11 "driving the vehicle," that his body position was
12 not restrained by the combination seat and
13 shoulder harness?

14 A Yes. I think that's what his
15 injuries and the kinematics of the accident show,
16 yes.

17 Q So, then, based on your report and
18 your analysis--why don't you number the positions
19 starting at the left with 1 so that...

20 A Okay.

21 Q Hold on to the pen, because I may be
22 asking you to do some more marking.

23 Again, just so that we're clear, we
24 have nine marked positions. Correct?

25 A I do, yes.

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Fisher - By Mr. Caldwell

85

1 Q All right. In Position No. 1, you
2 understand that Mr. Granat's theory is that the
3 tractor-trailer has already come into contact with
4 the W guardrail at approximately two to 300 feet
5 south of the bridge abutment. Correct?

6 A I'm not sure one way or the other if
7 that's his testimony. I would defer to him on
8 that.

9 Q Well, wouldn't that matter to you in
10 terms of where Mr. Medina's body is if that event
11 took place?

12 A So what I'm interested in is once we
13 start to get larger forces on the vehicle, that
14 we're going to begin moving him out of place.
15 Sideswiping along the guardrail is not
16 significantly slowing a tractor-trailer. It's--

17 Q The delta-V is not significant?

18 A Well, the acceleration--the
19 deceleration of the vehicle relative to Mr.
20 Medina's inertia to move him out of
21 the--potentially move him out of the seat one way
22 or the other is not going to be a large factor
23 relative to the other factors we're going to see
24 as we continue downstream.

25 Q It's been presumed that Mr. Medina's

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Fisher - By Mr. Caldwell

86

1 vehicle was traveling at 65 miles an hour.

2 So at Position No. 1, assuming that
3 he sideswiped the rail, it's your view that that
4 contact would not have significantly decreased the
5 forward speed of the vehicle?

6 A I would defer to Mr. Granat on that.

7 Q Well, for Position 5, did you form an
8 opinion as to how fast the tractor was moving?

9 A No, I have not. Again, I would defer
10 to Mr. Granat for that.

11 Q But in your report, you're describing
12 the deceleration from whatever that speed is.
13 Correct?

14 A Yes. And the magnitude of the
15 deceleration is important as opposed to the
16 absolute speed. So I'll defer to Mr. Granat.

17 Q Okay. Well, how much deceleration is
18 occurring at Position No. 5 when the tractor comes
19 in contact with the westerly guide rail?

20 A So, again, I would defer to Mr.
21 Granat, but between 4 and 5, we're going to start
22 to see sideswiping of the truck. So the wheels
23 are no longer rolling, but skidding along, which
24 means greater deceleration of the vehicle.
25 Whether that's on the order of .4, .5, .6 Gs, I

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87

1 don't know. But I would anticipate it's something
2 in that range. It's rubber on asphalt in
3 transition from the rolling of the tires on the
4 asphalt to a side slip.

5 Again, Mr. Granat could clarify what
6 that deceleration is, but my understanding is it
7 would be less than a G. It would be perhaps
8 something on par with hard braking, or not quite
9 that level, because we are still oriented, so that
10 we're rolling, to a degree.

11 Q But, in your report, as a general
12 proposition, you say a body in motion tends to
13 stay in motion. So that Mr. Medina's body, being
14 unrestrained in positions 1, 2, 3, 4 and 5, when
15 the truck starts to decelerate, Mr. Medina's body
16 does not. His body continues to go forward at the
17 same speed as before.

18 A Except for any resistance to that
19 kind of motion that that vehicle could provide.
20 And, as I said, these decelerations are going to
21 be within a range that he voluntarily resisted.

22 Q Okay. So he can voluntarily resist
23 these by holding on to the steering wheel, tensing
24 his muscles and holding himself between the
25 steering wheel and the back of his seat?

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88

1 A Bracing with his legs. I mean, if we
2 had Teflon seats in our cars and Teflon floors, we
3 would fall off our seats every time we hit the
4 brakes hard.

5 Q Right.

6 A But because that's not the case,
7 there's some friction with the seat, there's some
8 bracing with the legs, some bracing with the hands
9 that keep us from falling off our seats when we
10 brake hard.

11 Q Okay. So is it fair to conclude that
12 Mr. Medina is still seated in the seat with his
13 hands on the wheel and his feet on the floor in
14 Position No. 5?

15 A I have no reason to think
16 differently.

17 Q So, for 5, could you just put a note
18 on there, "Driver in seat."

19 A Sure.

20 (The witness complies with the
21 request.)

22 Q Position 6, driver still in the seat,
23 according to your analysis?

24 A He's going to start to move rightward
25 now that we're hitting these bridge rails.

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89

Q I understand you're saying that he's moving rightward, but is he still in his seat?

A Probably still in or close to--I mean, I haven't looked to see by Position 6 how many posts we've hit at that point.

Q Well, Mr. Granat did that for us at the deposition. He told us how many posts he thought he had hit at that point.

A Okay.

Q So what's the total number of posts that you understand the tractor hit during the course of this accident?

A I don't recall the total number of posts. I know he hit several posts. Those are going to be low acceleration, a few Gs. It's going to be sufficient to begin to, depending upon how much he's resisting this motion, it's going to begin to move him out of his seat or move him out of his seat by the time he's hitting the posts.

I haven't quantified that precisely post by post. I don't have--Mr. Granat said he couldn't give me absolute decelerations. He said a few Gs of deceleration for each post impact. He couldn't quantify it more than that. But a few Gs now, rather than a fraction of a G, are going to

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90

tend to move a person out of their seat, and, depending on how much resistance, he's going to move to his right.

Q So one G is how much force?

A One G is equal to the force of gravity. So--

Q Sixteen feet per second per second?

A Thirty-two feet per second per second.

Q Excuse me. Thirty-two feet per second per second. I'm sorry.

A That's the acceleration that would result.

Q Yes.

A You know, what one would feel would be--in terms of motion to the right would be as if your body were suspended with your right side toward the ground, and that force pulling your body toward the ground is now pulling your body to the right if you're decelerating at one G.

Q When we're walking around, we're all experiencing one G. Right?

A Well, we're experiencing one G of force. We're not accelerating at one G, because we keep our feet under us. So we're generally

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Fisher - By Mr. Caldwell

91

experiencing zero, or we're experiencing one G of gravity in terms of force. We're not accelerating, obviously, when we're--when we're standing, we're not accelerating toward the ground.

Q So, then, would you please mark for Position 6 if you still believe the driver is in the seat, or whatever combination you think it is, or partially in the seat.

Is he still in contact with the seat, his driver's seat in Position 6?

A He could be. I would say in 5 through 8, he's going to tend to--he's tending to move toward his right and likely coming out of his seat. If he's holding on really hard and prepared for this and gets a leg up to the right to brace, maybe he doesn't fall out of his seat.

But forces--I haven't looked at it to that level of detail, and I don't know how he has braced himself inside the truck, but forces would certainly tend to move him to his right. He's not in a normal seated position even if he's resisting and holding himself more or less in contact with the seat. Part of him is no longer going to be in the seat.

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Fisher - By Mr. Caldwell

92

I mean, we could say 5 through 8 moving toward the right out of normal seated position, something like that. I haven't--it's going to depend upon specific conditions of how he's bracing and resisting how far out of the seat he goes precisely.

Q And also the design of the seat. Correct?

A The design of the seat, if it's a deeper seat, could provide more resistance if there's a--

Q More fundamental than that, whether there's an armrest or not, like the chairs we're sitting in today.

A Yeah. It gives you something to brace against.

Q It gives you something to brace against.

And the design of this truck, according to the cut sheets that you sent me, or sent me through Mr. Cook, demonstrate that there are captain's chairs with armrests on both sides. Correct?

A In fact, we see it in photographs of the charred--we see the frame of the armrests

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Fisher - By Mr. Caldwell

93

1 remaining.

2 Q Right, pointing in the wrong
3 direction, but we see the armrests.

4 A His truck seats have an armrest,
5 yes.

6 MR. CALDWELL: It had more than an
7 armrest, as we see now in this next marked
8 exhibit.

9 (Tractor model received and marked
10 Exhibit F-5 for identification.)

11 Q If we look into the tractor--and,
12 first of all, is it your understanding that this
13 is a replica scale model of the truck in question
14 or just a facsimile?

15 A It's a facsimile. I have not
16 confirmed every last piece. For the general
17 dynamic function of how this vehicle was moving,
18 how it was jackknifed, I was using this. I have
19 not--

20 Q It's sufficiently accurate.

21 A It's sufficiently accurate for the
22 purposes of my analysis.

23 Q Okay. So if we look down at--we'll
24 call it plane view.

25 A Right. Sure.

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Fisher - By Mr. Caldwell

94

1 Q So if we look into the plane view of
2 the tractor-trailer, we see the captain's seats
3 with the armrests on both sides.

4 A We do.

5 Q And the armrest on what would be Mr.
6 Medina's right side would provide some additional
7 way for him to brace himself, assuming that he's
8 unrestrained by the seat belt?

9 A Yes. And it could physically resist
10 his motion not just by bracing, but act as an
11 impediment to rightward motion.

12 Q And an additional impediment to
13 rightward motion after that is the gear shifter.
14 Right?

15 A Yes.

16 Q And we know that that survived the
17 accident, because it's in the pictures.

18 A It's on the chassis.

19 Q It's on the chassis.

20 A Not with the cab.

21 Q Not with the cab.

22 So how, then, is the floor of the cab
23 attached to the chassis such that we can have the
24 shifter survive and the cab does not?

25 A What's interesting is we know that

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Fisher - By Mr. Caldwell

95

1 the seats are attached to the floor.

2 Q Of the cab?

3 A Of the cab.

4 Q Not to the frame of the chassis?

5 A Correct.

6 And the seats stay with the cab,
7 because we see the frames of the burned seats in
8 the other burned debris of the cab. So we know
9 that the floor of the cab is at least as far
10 forward as the seats separate from the chassis.

11 Q Right.

12 A Forward of that, where that--where
13 that separation is in the floor, whether it's at
14 the pedals, whether it's at the instrument panel,
15 we know that we see part of the steering column
16 with the chassis, we see the gearshift with the
17 chassis. So we know that that opening is
18 somewhere forward of the driver's seat.

19 Q By the fire wall, does this truck
20 have a fire wall between the engine compartment
21 and the passenger compartment?

22 MR. COOK: Objection to form.

23 You can answer.

24 A I would expect that it does.

25 Q Is that likely the place where the

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Fisher - By Mr. Caldwell

96

1 floor would separate, would be at the fire wall?

2 A I would defer to someone who knows
3 the vehicle structures better than I do, but the
4 evidence would suggest a location close to that.

5 Q Although it's not quite as evident in
6 F-5, in the material that you sent me--again, that
7 was sent through Mr. Cook.

8 MR. CALDWELL: Would you mark this,
9 please.

10 (Freightliner brochure of On-Highway
11 Truck Interiors received and marked Exhibit
12 F-6 for identification.)

13 Q F-6 is actually brochures for two
14 different model trucks. Correct?

15 A Yes.

16 Q The Coronado and the Cascadia.

17 A And the Cascadia, correct.

18 Q Neither of which is the model truck
19 involved in this accident.

20 A I'm not sure whether this was a
21 Cascadia or not. I would--again, I would defer to
22 someone who has more expertise on that.

23 Q All right. But certainly we
24 understand, from your prior testimony, that
25 there's a gearshift in between the driver and the

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Fisher - By Mr. Caldwell

97

1 passenger compartment. Right?

2 A Yes.

3 Q So that the pictures, the fifth
4 picture down, or the fifth sheet down that shows
5 the Cascadia 72-inch raised roof, with a view from
6 the driver's door across, there is no evidence of
7 a gearshift. Right?

8 A In the model shown in this picture,
9 no.

10 Q Right. But is it your opinion that
11 the rest of the configuration that is shown in
12 here is that the truck in question had the same
13 interior design?

14 A I couldn't say specifically that
15 every detail is the same. Again, the general
16 layout of a CST 120 truck with a sleeper cab is
17 what I was looking for here, not, you know,
18 whether all the knobs and dials and the instrument
19 panel are in the same place, and that sort of
20 thing.

21 Q Can you go to the one that's marked
22 Coronado, that's about six more pages down, and
23 it's essentially the same view from the driver's
24 side across, with three pictures.

25 A Yes.

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98

1 Q Okay. And here we go see the
2 gearshift.

3 A Yes.

4 Q And we also see evidence of the
5 captain's seat with the arm going--in this
6 particular picture, the passenger's seat armrest
7 on the inboard side is in the up stowed position.

8 A Correct.

9 Q Okay. And the orientation of the
10 internal components, for example, the way that the
11 dash mount comes around and comes in towards the
12 center of the vehicle, is the same as our specimen
13 as F-5?

14 A Yes.

15 Q So other things, then, that would
16 give Mr. Medina the opportunity to keep himself in
17 place in addition to the armrest is the actual
18 interior physical design of this truck, where the
19 dash component comes around and essentially cuts
20 off the middle of the truck.

21 A Yeah. His knees could be rightward
22 motion of forward parts of his body, like his
23 knees could be impeded by that wraparound section
24 of the instrument panel, correct.

25 Q And assuming that he got past the--by

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99

1 the way, are you assuming--which configuration are
2 you assuming Mr. Medina is driving this truck in
3 terms of the seating?

4 Are you assuming, for purposes of
5 your analysis, that his right arm is down--the
6 seat arm is down, or are you assuming that the
7 seat arm is up?

8 A I'm not assuming anything to that
9 degree of specificity.

10 Q Assuming that he got--that the
11 armrest is down and he got past the armrest, he
12 would also have to physically get past the
13 gearshifter and the center console before he ends
14 up on the passenger's side of the vehicle?

15 A Yes. It would be--it would probably
16 be hard to get past the armrest and the
17 gearshift. If the armrest is up, you could get
18 past the gearshift with little impedance, I would
19 estimate.

20 Q How much time are you estimating
21 elapsed between Position 5 and Position 6 on F-4?

22 A I have not quantified that. I'm sure
23 Mr. Granat has, and he could provide us with those
24 numbers. I didn't rely on that specific number
25 either way for my analysis.

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100

1 Q Well, I'm just trying to understand
2 your report, because on page 11, the largest
3 paragraph, in the middle, you say, "As the subject
4 Freightliner tractor impacted a series of bridge
5 rail posts, Mr. Medina initially moved to his
6 right, toward the area between the front seats."

7 A Correct.

8 Q "As the tractor continued to yaw
9 counterclockwise, Mr. Medina's inboard movement as
10 a result of post impacts took on an increasingly
11 rearward component, tending to move him inboard
12 and rearward between the front seats toward the
13 sleeper area of the cab."

14 Did I read that correctly?

15 A Correct.

16 Q Okay. So now what we're seeing both
17 in the specimen and in the cut sheet is that
18 you're saying that Mr. Medina is moving back
19 towards--diagonally back--

20 A Yes. So he starts off more toward
21 his right--

22 Q Right.

23 A --and as the truck rotates more
24 counterclockwise--

25 Q Right.

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101

1 A --so its orientation with each
2 subsequent bridge rail post, each interaction is
3 getting more rearward. So his rightward motion is
4 going to take a more and more rearward component.
5 So he's going between the seats but rearward
6 against his seat, and if he gets completely off
7 the seat, he would start to move rearward even
8 more.

9 Q As the truck is designed in the
10 exemplar, the passenger's seat would tend to
11 deflect him towards the rear, into the sleeper
12 area?

13 A Yes. He would start to go between
14 the seats. Gravity would also tend to bring him
15 toward the floor, so that he's--that would be
16 another obstacle of sliding clean across into the
17 passenger's seat. There's the rearward motion and
18 the fact that he would lose some elevation
19 across--spanning the gap between the seats.

20 Q Okay. When you say in your report
21 "Mr. Medina's body continued toward the ground,
22 which was toward"--

23 A I'm sorry. Where are you?

24 Q I'm back on the same page, on page 11
25 of your report.

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102

1 I withdraw that. I skipped over
2 something. Excuse me.

3 Does he make it into the sleeper area
4 in your analysis at Position 6, 7 or 8?

5 A No.

6 Q So he's always remaining forward of
7 the sleeper area?

8 A Yes. He may start to get between the
9 seats. But again, these--my understanding, from
10 Mr. Granat's analysis, is that these impacts with
11 the posts are not high--are not high acceleration
12 impacts. The truck is able to break those off
13 without a lot of resistance.

14 So that, you know, we're not talking
15 about like a side impact, where someone is going
16 to go a great distance across the vehicle. He
17 could be starting to get into that gap between the
18 seats and a little bit of rearward motion. He's
19 not going to be back deep into the sleeper area.
20 That happens later on, when there's a much more
21 significant ground impact.

22 Q And the relative decrease in the
23 velocity at 6, 7 and 8 is relatively small?

24 A That's my understanding, yes.

25 Q But for sake of example, so if we

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103

1 picked Position 6 as going forward at 50 miles an
2 hour, just for sake of example, by the time it
3 goes through 7 and 8, it's not significantly
4 decreased. It hasn't dropped to 30 miles an hour
5 in the space of 6, 7 and 8. Right?

6 A I don't know--I don't know what the
7 actual decelerations are over that range. I know
8 that the individual post impacts are not high
9 deceleration.

10 Now, obviously, between the post
11 impacts, he's decelerating as well. But when you
12 spread a change of velocity out over a large
13 period of time, you take away--you lower your
14 acceleration and, thus, lower the forces tending
15 to move the body to the right.

16 I asked Mr. Granat specifically not
17 about the speed at each of these points, but at
18 the accelerations associated with each of the post
19 impacts.

20 Q And what did he tell you?

21 A That those changes of--those
22 accelerations are going to be on the order of a
23 few G's with each post.

24 Q Help me out. I don't claim to be a
25 science whiz.

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Fisher - By Mr. Caldwell

104

1 You still have force equals mass
2 times acceleration.

3 A Yes.

4 Q Okay. And you're telling me that a G
5 is a measure of lateral force here. Right?

6 A Yes.

7 Q What is the functional equivalent of
8 one G, force equals mass times acceleration?

9 A What do you mean by "functional
10 equivalent"?

11 Q How fast would I have to be going--if
12 I walked into the wall, how fast would I have to
13 be walking in order to experience one G worth of
14 impact when I hit the wall?

15 A It depends on how fast you stop.
16 It's not the--

17 Q I'm coming to a dead stop. I'm
18 walking into the wall. I'm not walking through
19 it.

20 A If you stop in zero time, it could
21 be--it would be--sorry. In zero distance, it
22 would be infinite G's.

23 Obviously, in the real world, we stop
24 in a brief period of time. If it's 10
25 milliseconds or 100 milliseconds, depending on how

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105

1 we contact the wall or draft with the wall, it
2 could be--it could be anywhere from relatively low
3 G's if your body kind of crumples into the wall
4 versus infinite G's if you stop instantaneously.

5 Q So, for Position 7, would you make a
6 notation on your exhibit, please, as to where you
7 think Mr. Medina's body is at that point.

8 A Again, I haven't determined it to
9 that degree of specificity. As I said, he could,
10 as I've described in the report, between positions
11 5 and 8, he's going to tend to move inboard and
12 more rearward. He's going to start to get between
13 the seats. He's not going to move deep back into
14 the sleeper area. He could be between the seats
15 kind of poised to move into the sleeper area.

16 But we don't have enough detail in
17 this case to map out point by point how he's
18 bracing, how he's resisting to spacing out through
19 the sequence.

20 Q Notwithstanding any of that,
21 according to your analysis, he has not sustained
22 any of the injuries that you described in your
23 report?

24 A No. These are not significantly
25 forceful impacts. There's contusions, and that

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106

1 sort of thing. But, of course, we don't have
2 evidence of--

3 Q Bumps and bruises.

4 A That sort of thing. He's not going
5 to be breaking bones.

6 Q And not enough force here to render
7 him unconscious.

8 A No, I don't think so, during this
9 sequence.

10 Q For Position No. 9, and I want you to
11 understand that Position No. 9, when we were
12 discussing this with Mr. Granat, that this is
13 supposed to be a representation of the tractor
14 when it's coming into contact with the electric
15 wires.

16 A Okay.

17 Q So I want you to understand when I
18 ask you these questions that Position 9 is not on
19 the same plane as positions 1 through 8.

20 A Okay.

21 Q All right. That the tractor is on
22 its way down below the plane of the road. All
23 right?

24 A Okay.

25 Q Where is Mr. Medina at that point?

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Fisher - By Mr. Caldwell

107

1 Where is his body at that point?

2 Is it off the deck?

3 We're not on the ground. We're
4 falling.

5 A At that point, he's going to be
6 between his seats. Now he's in free fall. So
7 it's like--it's like when they train the
8 astronauts and they take them up in a plane and
9 the plane is in a nosedive, in a free fall.

10 Q He's weightless.

11 A He's weightless, yeah. So inside his
12 cab, he's weightless as it falls to the ground,
13 and he is in that space between the--between the
14 two seats, and he's in that aisleway between the
15 two seats.

16 Q Okay. As is shown in the Coronado
17 photograph.

18 A Yes.

19 Q Okay.

20 A He's getting--he's basically lined up
21 so that he can go rearward relatively unimpeded by
22 the seat when this thing makes ground impact and
23 everything is pulling him toward the back of the
24 sleeper area.

25 Q And what's the distance from the

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Fisher - By Mr. Caldwell

108

1 leading edge of the seat to the back of the
2 cabin?

3 A I haven't quantified that precisely,
4 but seven, eight feet, something like that.

5 Q That's an estimate.

6 A That's an estimate.

7 I'm sorry. Did you say the leading
8 edge of the seat?

9 Q Yes.

10 A I was estimating from behind the
11 seat.

12 Q That's fine.

13 A Again, that's--

14 Q Seven, eight feet.

15 A Yes.

16 Q Does your analysis presume that Mr.
17 Medina is doing anything to overcome the positions
18 that he's finding himself in, that he's actively
19 engaged in trying to save himself?

20 A He could be trying to hold on to
21 things as--now it's going to be on the order of a
22 second free fall. And if he has his--if he has
23 his wits about him--and again, that's a pretty
24 fast perception of reaction time, not my area of
25 expertise, but I have worked with people who had

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Fisher - By Mr. Caldwell

109

1 that area of expertise. If he manages to grab
2 ahold of things, he could be resisting. I
3 haven't--it hasn't affected my analysis one way or
4 the other.

5 Q In Position 9, is it your opinion
6 that the tractor is in free fall?

7 A The tractor is going to be in
8 something close to free fall.

9 The trailer is going to be pivoting
10 around the--the back end of the trailer is going
11 to be--I don't know if Position 9 represents that
12 it's still on the bridge, the rear wheels. But if
13 that is the representation there--and again, I
14 would defer to Mr. Granat--that means that the
15 trailer, the front end of the trailer is falling,
16 the back end of the trailer could still be
17 supported by the bridge, so it's not falling, so
18 the trailer is rotating, but the tractor is going
19 to be in something very close to free fall.

20 Q By the way, on the remainder of F-5,
21 which is the trailer, this particular facsimile is
22 not accurate, because this box did not have the
23 aerodynamic structures that are shown on this
24 particular facsimile.

25 Do we agree on that?

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Fisher - By Mr. Caldwell

110

1 A I haven't confirmed that precisely,
2 but I think I would have remembered what Mr.
3 Granat--Mr. Granat probably would have mentioned
4 that one way or another in his analysis, and I
5 don't recall that. So--

6 Q Okay. I just wanted to make sure
7 that we were--

8 A It's certainly consistent with the
9 photograph.

10 Q With the photograph, that it's not
11 there.

12 A I would agree with that, yes.

13 Q So back to the exhibit again that's
14 in front of you, the trailer is moving forward
15 consistently in a northwest direction?

16 A Correct.

17 Q And in order for the trailer to end
18 up in the final position that's shown beyond, or
19 that's part of 9, or, actually, I should call it
20 10, since it's another position separate from the
21 tractor, the trailer has to go nose down, rotate
22 90 degrees, and end up on its right side?

23 A My understanding--and again, I would
24 defer to Mr. Granat, but my understanding is that
25 the motion is primarily yaw, or there's a

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Fisher - By Mr. Caldwell

111

1 significant yaw component. So I'm trying to
2 orient the truck right now with Position 9.

3 Q Mr. Granat opined, I believe, that
4 the yaw was 20 degrees.

5 A 20 degrees from where to--

6 Q Relative to the side of the road. We
7 started in the beginning about how we were going
8 to discuss yaw as being relative to the west side
9 of the road.

10 A So the yaw of the trailer?

11 Q Is 20 degrees.

12 A Is 20 degrees. And that looks about
13 like what we're seeing in the figure here.

14 So now we're coming off the bridge.
15 My understanding of Mr. Granat's analysis is that
16 as the truck drops from the bridge deck, from the
17 height of the bridge deck down to the embankment
18 below--

19 Q Right.

20 A --is that during that airborne phase
21 it's continuing to yaw and roll--the trailer is
22 rolling to the right--

23 Q North of--northwest. Okay.

24 A Yes.

25 So we go--it goes off the bridge

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Fisher - By Mr. Caldwell

112

1 deck, with the trailer moving primarily forward
2 and the tractor moving primarily rearward. It
3 yaws, you know, and as it drops, it's continuing
4 that yaw motion which it developed momentum for up
5 on the bridge deck, and we're hitting the ground--

6 Q Okay. We've got--

7 A --with the right side of the trailer
8 and the tail end of the tractor, resulting in an
9 impact that separates the cab of the tractor from
10 the chassis.

11 Q Okay. So you don't believe, based on
12 what you understand, that the tractor went tail
13 end over front end and that it ended up at a
14 position of rest by rotating through a yaw motion
15 180 degrees?

16 A I believe it rotated through a yaw
17 motion close to 180 degrees, the entire unit,
18 tractor and trailer, from Position 9, but it also
19 rolls, what would be a passenger's side leading
20 roll for the trailer, which is a--which is a
21 driver's side roll for the tractor and a nose--and
22 a nose up pitch of the tractor, so that when the
23 side of the trailer, when the bottom wheels on the
24 side of the trailer make contact with the ground,
25 the tractor is tail end leading on that ground

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Fisher - By Mr. Caldwell

113

1 impact.

2 So we go off the bridge, yaw, roll in
3 this motion. Basically, we're continuing the
4 momentum of the motion set up already up on the
5 bridge deck.

6 Q And that's what Mr. Granat described
7 for you at this long meeting when you were all
8 together?

9 A That's my understanding of his
10 reconstruction, yes. That's when I--

11 Q Did he actually demonstrate what you
12 just demonstrated to me?

13 A No. I got this truck afterward,
14 unfortunately.

15 And just to clarify, again, I would
16 defer to Mr. Granat for the precise detail of
17 that.

18 What's important for me is that the
19 tractor impacts the ground nose pitched up, tail
20 end leading, because the motion in the air leading
21 up to that is free fall, with relatively little
22 force on Mr. Medina's body.

23 Q So tell me when, then, does the mesh
24 fence penetrate the cab, Mr. Medina's body exits
25 and lands on the ground between positions 8 and 9,

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Fisher - By Mr. Caldwell

114

1 as you have just described it.

2 A So, actually, if this is Position 9,
3 let's call the truck on the ground Position 10.

4 Q Okay. That's fine.

5 A So, in Position 7 and 8, we're
6 starting to interact potentially with the fence.
7 Now, I don't know, when we see the fence on the
8 ground, which end we're looking at in terms of I
9 haven't unfolded that and reconstructed which end
10 is which with the tissue on it.

11 But part of that is coming into the
12 right side of the cab as it rotates and it's
13 gathering--so it's gathering up the fence, whether
14 it penetrates during this right-sided impact or
15 whether it gets pulled as the truck is falling and
16 gets torn into the cab of the truck.

17 I know that there's fence structure
18 here on the outside. Again, we don't know the--we
19 don't know the precise details. There's no right
20 side of the cab left for us to investigate. But
21 that fence basically comes in and apparently gets
22 pulled back out, so that it ends up as the truck
23 comes to--comes onto the ground and impacts tail
24 end leading, that that part of the fence is now
25 over on the left side of the truck.

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115

1 Q Well, on page 12 of your report,
2 again, roughly two-thirds of the way down, you say
3 "which was clearly not charred like the rest of
4 Mr. Medina's body and was located remote from the
5 cab, indicates that the fence penetrated both the
6 cab and Mr. Medina's body at some point during the
7 fall from the bridge, but separated from his body
8 and cab prior to final rest on the embankment."

9 So, according to your--I'm sorry.
10 Did I read that correctly?

11 A Correct, yes.

12 Q So, according to your report, all of
13 this interaction with the fence and the post
14 happens in the time frame between 8 and 10.
15 Correct?

16 A Yes. It could it be 7 to 10, 8 to
17 10, something in that--in that time frame.

18 Q Well, no, no. Your report says
19 "during the fall from the bridge." So you've
20 described before that it's not until Position 9
21 that we have free fall.

22 So doesn't the word "fall" mean the
23 same thing in both contexts?

24 A Well, part of the truck is beginning
25 to fall from the bridge by Point 6. I mean, if we

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116

1 define "free fall" specifically. But part of it
2 is going over the bridge by Point 6. As those
3 front wheels go over the edge of the bridge,
4 they're going to be lower than the bridge deck.
5 So I think I was not describing to that level of
6 specificity.

7 He's going to start to capture that
8 fencing and support posts. Those are going to
9 have penetration as the truck is falling, whether
10 that starts at 7 or starts at 8. But we know that
11 by 10, once it lands on the ground, because of our
12 archeological survey, that the fence is done
13 interacting with the cab and, in fact, it's back
14 out of the cab and over on the other side by the
15 time everything lands on the ground and a lot of
16 that fence is under the chassis of the truck.

17 Q So, in your view the chassis, the
18 tractor is not changing direction during the
19 course of the motion. It is always pointing first
20 west and then it starts turning more southwest and
21 as it comes off and continues to rotate, still
22 coming around towards the east and then ends
23 up--in effect, it does a 360 and ends up on the
24 ground facing northeast.

25 That's your version of events?

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Fisher - By Mr. Caldwell

117

1 A No. We've got a lot of extra yaw in
2 there. So what I have is at Position 9--and I'm
3 just going to hold this relative to the diagram in
4 Exhibit F-4--

5 Q All right. Just to be clear, at
6 Position 9, the tractor, in reference to the
7 northbound lane, which we're going to call 6 and
8 12. Going north is 12.

9 A Okay.

10 Q Okay. The tractor in Position 9 is
11 pointing at seven o'clock.

12 A Approximately, yes.

13 Q Approximately, okay.

14 And so the tractor ends up as part of
15 Position 10 pointing at one o'clock. Correct?

16 A Yes.

17 Q So to get from seven o'clock to one
18 o'clock, the tractor has to do a 180 rotation
19 someplace.

20 A Yes. Not 360. That's where we've
21 got too much.

22 Q Well, it starts off at twelve o'clock
23 back at Position No. 4.

24 A Sure.

25 Q Sure.

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Fisher - By Mr. Caldwell

118

1 So from 4 to the end, we're having
2 this tractor do a 360.

3 A Yes. About half of that up at more
4 or less bridge level with a little bit of the
5 initial free fall, and then once everything is
6 over the bridge deck, we do that other 180
7 degrees. But we also add to that the roll, which
8 results in a pitch up, the roll of the trailer
9 results in a pitch up and some roll of the tractor
10 as well.

11 Q Assuming all that is true,
12 nonetheless, based on the math that we've been
13 talking about and the orientation you're talking
14 about, the tractor had to do a 180 between
15 Position No. 9 and its final position of rest.

16 A Yes.

17 Q Okay. And you understand that in
18 Position No. 9, that the tractor is already some
19 distance below the deck of the road. Right?

20 A Yes.

21 Q It is, according to Mr. Granat, at
22 the height of the wire on the posts.

23 A Okay.

24 Q All right. Well, how high--how much
25 time and how high does this tractor--let me back

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Fisher - By Mr. Caldwell

119

1 up. I'll withdraw that. Let's start over again.

2 The top of the telephone poles are
3 not at the same level as the bridge deck. Right?

4 A Yes.

5 Q And at the edge of the road, the
6 distance from the bridge deck to the road is
7 something more than the 32 feet where the thing
8 impacts, where the tractor impacts.

9 A Yes.

10 Q Yes. Okay.

11 And so the slope of the hill is
12 acting like the hypotenuse of a triangle, from a
13 geometry point of view.

14 A Okay. Sure, yes.

15 Q So if we think of the telephone poles
16 as being the leg of the right triangle, and then
17 the distance from the wire into the embankment as
18 being one of the legs of the triangle. Right? Am
19 I--

20 A The wire--are you saying the wire
21 runs toward the embankment or if we drew a line
22 from the wire--

23 Q Right.

24 A I understand.

25 Q At that elevation, if you just draw a

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Fisher - By Mr. Caldwell

120

1 line across there.

2 A Okay.

3 Q So you have a distance from the road
4 up that's the height of the wire, and then to get
5 from the edge of the street into the embankment,
6 you go at right angles--

7 A Okay.

8 Q --and so, then, the slope is acting
9 as the hypotenuse of that triangle coming back to
10 make that geometric figure.

11 A Correct.

12 Q Okay. Fine.

13 How far above the road is the
14 tractor, in your analysis, when it contacts the
15 wire?

16 A I have not done that analysis.
17 That's Mr. Granat's analysis.

18 Q But in your analysis, whether you've
19 done the height analysis or not, it is from that
20 position that the tractor has to go 180 degrees.
21 From Position 9 to Position 10, it has to
22 accomplish that physical feat in that time and
23 space description.

24 A It's my understanding of Mr. Granat's
25 analysis. Whether now in Position 10 it's shown

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Fisher - By Mr. Caldwell

121

1 at--it's shown at rest at this one o'clock
2 position, whether it was--whether it was like this
3 or was it three o'clock, it's tail--it's tail end
4 leading. So we could have some pirouetting on
5 that tail end. Again, Kevan Granat could fill in
6 the details on that. But my understanding is
7 that, obviously, the trailer has yawed 180
8 degrees--

9 Q No doubt about it.

10 A --and the tractor, to the degree that
11 it yaws completely with the trailer, has yawed 180
12 degrees, but it's primarily hitting tail end
13 leading.

14 So could we be misinterpreting that
15 one o'clock rest position with its yaw angle at
16 impact?

17 Could it have been two o'clock or
18 three o'clock and then when it fell--when the nose
19 end fell down to the ground, it came into more
20 this one o'clock?

21 That's a level of detail and
22 expertise that belongs to Mr. Granat.

23 Q I can accept your argument that maybe
24 the tractor falls to the ground.

25 But once it comes to its initial

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Fisher - By Mr. Caldwell

122

1 position of rest and is leaning up against
2 something, you're not concluding that it did an
3 additional rotation through the horizontal axis,
4 are you?

5 A Well, I'm saying once it hits on its
6 tail end, it's not going to stay standing on its
7 tail end. It's going to fall down. In which
8 direction it falls, whether it changes its yaw
9 angle, its yaw orientation a little bit during
10 that fall can depend upon the specifics of how it
11 hits the ground. The level of detail and
12 expertise belong to Mr. Granat.

13 Q I just want to make sure that you're
14 describing for me a continuous motion that the
15 tractor hits tail end and then continues to fall
16 on its wheels, that there's not some delay between
17 those two events.

18 A No. That's--yeah. I don't think it
19 stays standing on its tail end, correct.

20 Q Okay.

21 A It's impacting, and then--the tail
22 end is impacting, and then it falls onto the
23 ground to its rest position--

24 Q And according to--

25 A --more or less.

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Fisher - By Mr. Caldwell

123

1 Q Okay. And according to your
2 analysis, that's the time when the cab comes loose
3 from the chassis.

4 A Well, according to Mr. Granat's
5 analysis. But I certainly agree with that from a
6 physics perspective.

7 Q Well, your analysis of the injuries,
8 his subsequent injuries is predicated on that?

9 A Yes.

10 Q So which way is Mr. Medina facing
11 when the tractor hits tail end?

12 Is he facing towards the front of the
13 cab?

14 Is he facing towards the passenger's
15 door?

16 Is he facing towards the driver's
17 door?

18 Is he lying on his back looking up?

19 Is he lying on the floor looking
20 down?

21 What did you conclude?

22 A Relative to the cab, he's facing
23 toward the front of the cab, so toward the
24 windshield, with his right side--well, his back,
25 primarily, the right side of his back exposed

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Fisher - By Mr. Caldwell

124

1 toward the direction he's going to go on that
2 ground impact. And the reason for that is to get
3 the right posterior rib fractures when he moves at
4 approximately 30 miles an hour toward the back,
5 the sleeper area of the truck.

6 Q Well, then, you're assuming that he's
7 moving at 30 miles an hour inside the cab of the
8 truck because he's not holding on to anything and
9 trying to resist these forces, he's just a passive
10 body being thrown around like a Ping-Pong ball?

11 A Well, at a 30-mile-an-hour impact
12 with the ground, there's going to be very little a
13 human can do to resist that kind of motion. We're
14 not talking about a couple of, you know--we're not
15 talking about a fraction of G's here, where you
16 can resist it, or a couple of G's here, where
17 you're--you're not going to resist it completely,
18 but you can maybe brace against it and mitigate
19 it.

20 Once you hit the ground at 30 miles
21 an hour, there's no amount of bracing or holding
22 on that's going to change what physics is doing to
23 you at that point in time.

24 Q And, of course, it's not the fall.

25 It's the sudden stop that's the issue.

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125

1 A Exactly. The truck comes to a sudden
2 stop, the chassis--sorry. The chassis comes to a
3 sudden stop, the cab keeps going--Mr. Medina keeps
4 going, the cab comes to a stop, and Mr. Medina
5 keeps going--

6 Q Right.

7 A --and he's striking structures inside
8 the cab and fracturing his right posterior ribs, 2
9 through 10, in that impact.

10 Q So, based on your analysis and
11 looking at the structure of this truck in F-5,
12 what is it, in your view, that he smashed into?

13 A I haven't determined to that level of
14 specificity. As you saw in my report, I said
15 there are cabinets back there, there's a bunk,
16 there's the rear walls. I know he's--because it's
17 impacting tail end leading, I know that he's going
18 backward and to his right in that cab and hitting
19 something back in that area with the right side of
20 his back and fracturing his ribs.

21 Q But he didn't fracture his collar
22 bone on the right side. Right?

23 A No. It's to his back, not to his
24 front.

25 Q And he didn't fracture his shoulder?

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Fisher - By Mr. Caldwell

126

1 A Correct.

2 Q Based on the cut sheets again, it
3 certainly appears that a lot of the interior
4 surfaces of this truck are padded. Right?

5 A Certainly up in the driver
6 compartment they are.

7 Q So the seats are padded, the dash is
8 padded, the steering wheel is padded, all of the--

9 A Yeah. And that's probably regulated
10 for that driver compartment.

11 Q Right. Also, in the picture that
12 precedes it, where it says, "Inside, it's a real
13 softie"--

14 A Is that a technical term?

15 Q Well, it's on their literature. I'm
16 only reading what's on their literature.

17 --it does show that there is padding,
18 quilting. It's not just a hard plastic surface in
19 the back there by the bunk bed, is there?

20 A I'm not sure what's under--I presume
21 the mattress is soft.

22 Q Yes.

23 A What's behind that quilting and how
24 thick that quilting is, I don't know. These
25 cabinets, these--

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127

1 Q The cabinets are probably molded,
2 extruded plastic, or something like that, bolted
3 to the floor, formfitted, or something of that
4 nature. They're not padded.

5 A If you hit it at 30 miles an hour,
6 it's going to fracture some ribs.

7 Q Right.

8 MR. COOK: You're just referring to
9 what's shown in the pictures in the
10 brochure. Correct?

11 MR. CALDWELL: Yes, that's correct.

12 Q So, in B-27, we are looking at the
13 outside rear of the cab looking from the outside
14 towards the chassis. So we're essentially looking
15 from east to west.

16 A Yes. Correct.

17 Q And in G-11, back to our
18 archeological analogy, the fencing is below the
19 chassis?

20 A Yes.

21 Q So the fencing gets there first?

22 A At ground contact, yes. Yes.

23 Q And that's true by the driver's side
24 door that's shown here and by the left rear--

25 A The driver's side--yeah. I guess the

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128

1 driver's side door area, the door is gone.

2 Q Right. The fencing is below the
3 chassis there and below the step, and to the rear
4 it's also below the rails of the truck. Right?

5 A Yes.

6 Q And that is also plainly evident, is
7 it not, in G-10, where you can see the fence
8 underneath the chassis, as a matter of fact,
9 coming forward of the wheel, and it's underneath
10 the chassis there, also?

11 A Yes.

12 Q And there are photographs, are there
13 not, with the remains of the two seats?

14 A Yes, there are.

15 Q As a matter of fact, in your
16 compilation you have them marked out, and I
17 presume that you did that work--

18 A I did.

19 Q --because you emphasized the
20 highlighting of those.

21 A Yes. Yup.

22 Q And what was previously marked as
23 CB-4 back in June of 2012, we can see the remains
24 of the seat frames in the center of this
25 photograph. Correct?

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Fisher - By Mr. Caldwell

129

- 1 A Yes. Here's the passenger's seat
2 frame, we're looking at it side on, the driver's
3 seat frame, this is the outboard armrest, and the
4 head restraint frame up here.
5 Q Outboard armrest, meaning closest to
6 the door?
7 A The door, for the driver's side.
8 Q So this is closest to the driver's
9 door. Right?
10 A Correct.
11 Q And the one in the--sorry. The
12 passenger one is which one?
13 A So this is the passenger's seat.
14 We're looking at the driver's seat side on. So
15 you can see a little bit of the far side--sorry,
16 the inboard side of the frame over here. But
17 we're mostly looking at the side of the back, the
18 seat back frame.
19 Q This is the passenger's frame.
20 Correct?
21 A No. That's the driver's frame. This
22 is the driver's frame here. This is the head
23 restraint of the driver's seat. This is the
24 outboard side. This is the inboard side of the
25 driver's seat. And then this is the passenger's

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130

- 1 seat here. This is the outboard side, head
2 restraint, inboard side, and then the support that
3 goes between the frame rails there.
4 Q Can I see your marked-up one, please?
5 A Sure.
6 Q I believe it's the same picture.
7 This is a better photograph. Okay.
8 A There are several here. In fact,
9 this is even closer.
10 MR. CALDWELL: All right. Let's mark
11 this F-7.
12 (8 1/2" by 11" color photograph
13 entitled "Accident Scene Photos: Cab"
14 received and marked Exhibit F-7 for
15 identification.)
16 Q What's now been marked F-7, we have
17 both of the seats, which you have marked the
18 "Passenger's seat frame" and then the "Driver's
19 seat frame," and then you have also interlineated
20 where you believe Mr. Medina's body was that would
21 have been in a prone position, so, facedown, head
22 down the hill--
23 A Correct.
24 Q --approximately.
25 A And this, obviously, came from

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Fisher - By Mr. Caldwell

131

- 1 studying the whole series of photos to determine
2 how his body was oriented and then going back to
3 the other photos and fitting that back in.
4 Q And in the other corner of the
5 picture we have the remains of the front of the
6 trailer.
7 A Yeah. I think somebody called it the
8 kingpin plate, the part of the trailer, yeah, the
9 front floor of the trailer that attaches to the
10 tractor.
11 Q The front floor of the trailer, which
12 is oriented backwards from where it would be if it
13 were assembled correctly.
14 A Correct.
15 Q And so, archeologically speaking, the
16 seats are between the ground and the underside of
17 the floor of the trailer--
18 A Correct.
19 Q --which means that the seats got
20 there first.
21 A Yes.
22 Q So, then, from that it's fair to
23 conclude that the tractor came--sorry, that the
24 cab came loose from the frame before the trailer
25 impacted the ground?

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Fisher - By Mr. Caldwell

132

- 1 A I think the cab came loose from the
2 trailer when--
3 Q From the tractor.
4 A Sorry.
5 --from the tractor when the chassis
6 impacts the ground in this tail up orientation.
7 Now, if you would ask about whether
8 it stopped or whether it's a continuous motion,
9 it's going to be a continuous motion. But the
10 tractor, you know, for a brief instant it is
11 stopping, but then it's going to continue to fall
12 over. And what that allows, it allows for that
13 separation of the cab when this hits and the cab
14 just keeps going toward the ground at
15 approximately 30 miles an hour, it falls to the
16 ground.
17 And I'm using the truck top to
18 represent the entire cab. And then we have our
19 fall, kind of like the free fall of this truck.
20 Now, this chassis, which is now landing tail end
21 leading, is standing, up ended, nose in the air,
22 falls down, so that the first dual tire lands more
23 or less in the front seat area. That's what I
24 picture happening.
25 Q By the way, the front seat area gets

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Fisher - By Mr. Caldwell

133

1 to be under the tire before the chassis falls.

2 Right?

3 It comes from the left front corner,
4 the passenger's--sorry, the driver's seat goes all
5 the ways from being in the upper left-hand
6 quadrant of the tractor as it falls backwards,
7 being in the lower right-hand quadrant.

8 A Correct.

9 Q It gets to the ground first before
10 the tractor-trailer comes down on top of it,
11 archeologically speaking. Yes?

12 A Yes.

13 Q The entire cab is going to--strike
14 that.

15 If we consider the chassis when it
16 strikes the ground in its vertical or semivertical
17 position with the nose up at twelve o'clock,
18 pointing up, twelve o'clock. Right?

19 A Okay.

20 Q All right?

21 A Twelve o'clock, in this--

22 Q Twelve, six. Right?

23 Okay. The top of the--if the front
24 of the chassis is twelve o'clock, the bottom of
25 the chassis six o'clock, the right-hand side is

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Fisher - By Mr. Caldwell

134

1 three--

2 A Three.

3 Q --and the left-hand side is nine.

4 A Yes. I appreciate that.

5 Q Good. No problem. It helps
6 everybody.

7 A We're talking about three dimensions
8 here. I know it gets tricky.

9 Q So the cab comes off and is traveling
10 from its twelve o'clock orientation towards five
11 o'clock.

12 A Yeah. So it's--we see that there's
13 actually some right bias, which, again, makes
14 sense.

15 Q Let me do this.

16 If the nose of the tractor is
17 pointing at one o'clock--I don't want to talk to
18 you into an orientation that you're not happy
19 with.

20 A Yeah.

21 Q So if I say twelve, are you saying
22 that the nose of the tractor is more one o'clock
23 than twelve o'clock?

24 A Between twelve and one.

25 Q Okay. Fine.

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Fisher - By Mr. Caldwell

135

1 Regardless of whether it's twelve,
2 one or 12:30, you say, and I agree, that the cab
3 is going backwards towards five or six o'clock.

4 A Correct.

5 Q Okay. And the fence that you say
6 penetrated the passenger's door, which is now
7 located at three o'clock--

8 A So--

9 Q Wait a minute. Let me just...

10 The passenger's door that you say was
11 penetrated by the fence is at three o'clock, but
12 the fence and the post that did this is located at
13 seven o'clock. Correct?

14 A Correct.

15 Q Okay. And for purposes of our
16 analogy, we have what kind of diameter across the
17 face of this clock?

18 A If we were to say the length of the
19 truck?

20 Q Yes.

21 Twenty-seven feet?

22 A Sure. Yes. I'll accept that
23 estimate. I'm not certain, but that sounds
24 reasonable to me.

25 Q And in addition to which now if we're

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Fisher - By Mr. Caldwell

136

1 using the top of the roof to represent the entire
2 cab, you're saying that the cab comes down and
3 ends up at right angles to the chassis?

4 A Yeah. It actually ends up this way.

5 So--

6 Q Sorry. "This way" doesn't help the
7 record.

8 A It ends up not only rearward and
9 rightward of the chassis, but also rotated, as
10 seen from above, rotated about 90 degrees
11 counterclockwise.

12 What causes it to do that, I could
13 speculate, but it would be--

14 Q No, no. You know better than that.
15 We don't want you to speculate.

16 A Okay. Something hangs on longer than
17 something else, so that it--so that it yaws.

18 Q So that it yaws. Okay.

19 But the distance from the cab
20 remains, whichever way it's focusing, the chassis,
21 Mr. Medina's body is between those two points, and
22 the fence post, which is on the other side of the
23 chassis, is at seven o'clock.

24 A Sure.

25 Q Okay. How far?

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Fisher - By Mr. Caldwell

137

1 A It could be 20, 30 feet. I
2 have--yes.

3 Q Twenty to 30 feet.

4 A Yes.

5 Q And mind you now, according to what
6 you say happened, is that the fence post that's at
7 seven o'clock, and Mr. Granat I think estimated
8 that it was a second and a half for this last
9 portion of the accident to occur, when the tractor
10 comes off the road and hits the ground, in a
11 second and a half the fence post goes through the
12 cab, into the body, out of the body, and ends up
13 on the other side.

14 A Yes.

15 Q Okay. Let's talk about what the
16 fence post has to do in order to do that. All
17 right.

18 The passenger's side of the truck,
19 which is not represented--well, actually, it is.
20 Okay.

21 If we flip the truck over on the
22 underside, we see representations of the fuel
23 tank?

24 A Yes.

25 Q Okay. And what is this

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Fisher - By Mr. Caldwell

138

1 chrome-looking thing--

2 A I don't know.

3 Q You don't know.

4 MR. COOK: Do you understand that the
5 bottom of that matches up to our subject
6 truck?

7 THE WITNESS: I don't--

8 MR. CALDWELL: I take it that it
9 doesn't.

10 THE WITNESS: I have not looked
11 closely at the bottom of this truck one way
12 or the other. It doesn't affect my
13 analysis.

14 Q But your analysis is that the post
15 and the fence come through the passenger's side of
16 the truck, so it has to go past the fairings,
17 which are along the side of the truck--

18 A It depends on how the posts are
19 oriented. It could be--it could be a point of the
20 post as we're--as we're knocking one end of the
21 post with the fairings, whether the point of the
22 post rotates in.

23 Again, it would be nice to have the
24 right side of this vehicle to investigate and to
25 look for that penetration. I can't tell you that

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Fisher - By Mr. Caldwell

139

1 specifically.

2 Q Whatever is on there in the pictures,
3 some of it is on the mesh.

4 A Yes.

5 Q Okay. So are you saying that the
6 mesh came all the ways into the interior of the
7 truck?

8 A Yes.

9 Q And you're saying that the post that
10 the mesh is attached to came all the way into the
11 interior of the truck?

12 A Part of the mesh and part of the post
13 came into the interior of the truck.

14 Q Is there any evidence in the
15 photograph of blood or body matter, as you have
16 described it, on the end of the pipe?

17 A Let's look at those photos.

18 Q And if we haven't marked it, we
19 should mark it.

20 A Sure.

21 This is just a series of photos.
22 These are zoomed in from the police photos, and
23 then these are stills from the video.

24 Q So let's back up.

25 Corporal Marcoux is walking around,

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140

1 he points down, and he says, This looks like
2 blood, and he was pointing to something that was
3 laying on the ground, either the fence post or the
4 mesh. Correct?

5 A I thought he was pointing to what we
6 see here.

7 Q "What we see here" being?

8 A Sorry. What we see here being on the
9 mesh and the post. If he was pointing to
10 something separate from those on the ground, I did
11 not catch that.

12 MR. CALDWELL: Let's give this one a
13 number.

14 (8 1/2" by 11" of two color
15 photographs entitled "Police Accident Scene
16 Photos" received and marked Exhibit F-8 for
17 identification.)

18 (A luncheon recess was taken.)

19 MR. CALDWELL: Back on the record.

20 BY MR. CALDWELL:

21 Q F-8, so how much is it zoomed in from
22 normal? 200? 300? Do you know?

23 A No. I just pulled the bar until I
24 was zoomed in close.

25 Q Okay. I believe I was asking you

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Fisher - By Mr. Caldwell

141

whether or not there was any evidence of body matter or blood on what I'm calling the blunt open end of the post.

A I don't see any.

Q And that's true for both posts--sorry.

There's two pipe-shaped objects.

One is a post, one is a rail,

perhaps--

A Sure.

Q --but neither one of them has any evidence of blood or body matter on them?

A I don't see any on here, that's correct.

Q And in the section that is zoomed in in F-8, do you want describe for me where you're saying that there is evidence of whatever?

A Sure.

So in the zoomed-in picture on F-8, just above the circular end of the pipe, we see some dark material, some dark tissue that's shown better on some of the video just above that pipe in the picture.

Q If, as you described in your report, the penetration of the cab took place while it was

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Fisher - By Mr. Caldwell

142

falling from the deck, where does this fence post and mesh get the resistance necessary to penetrate the cab door, at the very least?

A As the cab is--as the cab is moving down, I mean, we could be--the truck is colliding with it. So it has its own inertia. We could have parts of the fence hanging up at different points, snagging, so that it gets pulled through. Obviously, it goes into the truck, comes back out. We have a 25,000-, 30,000-pound vehicle that's dropping--

Q Actually, according to Mr. Granat, the tractor is 17,000 pounds.

A Okay. We have a 17,000-pound vehicle falling to the ground and pulling this piece of fence and its support structure along with it, so this fence is going to go wherever that--wherever the truck takes it. There's going to be times when it's snagging, times when it's releasing.

I mean, I picture this fence structure like a chain woven among poles, that you're giving a yank on it and the end is flipping around. I mean, this could be whipping around in a number of different directions. It comes into the cab, it whips back around, and it ends up over

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Fisher - By Mr. Caldwell

143

on the left side, at rest.

I have not attempted to model in any way the complex motions of this part of it.

Q If you take this injury out of your AIS evaluation, what does it reduce the score to?

A Well, so, actually, the score--the AIS score for the abdominal laceration is 2.

Q Right. Okay. And it's not one of the three highest. So it didn't end up in your calculation of 27 at all.

A Yeah. What's--what's interesting is that the AIS does not allow for--well, it's not that it does not allow for. It doesn't give a scoring for evisceration.

And that was something that I checked with a couple of our certified AIS scores with. I checked with some of the people who write the AIS about, you know, in a case where you have an abdominal laceration with intestinal evisceration, how do you--do you score that as anything more than an AIS 2 abdominal laceration.

And they said, Well, you would obviously score the intestinal injury.

Now, in this case, we have the eviscerated intestine, but it's badly burned and

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Fisher - By Mr. Caldwell

144

charred, and Dr. Bundock did not score--or did not diagnosis or identify specific injury to the eviscerated intestine.

Q As a matter of fact, in her deposition she kind of discounted the evisceration altogether, more or less concluding that it wasn't terribly significant in her analysis of cause of death at all. Right?

MR. COOK: Object to form.

You can answer.

A Well, yeah, I don't know if she discounted it in terms of--in terms of cause of death.

If you're starting to--once you have intestinal injury, which you can diagnose, then you're jumping up to, you know--if you've perforated the bowel, then you're jumping up to an AIS 4 level.

Now, in this case, the most we can score is the AIS 2 abdominal laceration, completely neglecting the intestinal evisceration.

In a case where there wasn't a fire or there wasn't subsequent fire damage to that eviscerated intestine, we could--we would probably

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Fisher - By Mr. Caldwell

145

1 have diagnosable intestinal damage which we could
2 score, and if that were the case, we would have an
3 AIS 4 injury there.

4 Q And Mr. Cook spent a fair amount of
5 time cross-examining my biomechanical guy about
6 what it means to be AIS certified.

7 A AIS certified, yes.

8 Q Okay. So my understanding from my
9 review is that to be AIS certified, all you need
10 to do is be a high school graduate and pass the
11 exam eventually.

12 A You have to pass the exam and you
13 have to--you have to recertify every couple of
14 years. You more or less have to have the code
15 book--

16 Q Memorized.

17 A --memorized--

18 Q Right.

19 A --because you have to be able to
20 score it without the assistance of a book. And
21 it's not just a matter of looking up the scores,
22 but it's knowing all the rules that say, But in
23 these cases this combines with this and but in
24 these cases this combines with that, and all of
25 those exceptions to the rule. The easy part of

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Fisher - By Mr. Caldwell

146

1 the scoring, you know, I flipped down through and
2 score those very quickly.

3 Q Right. But from an educational point
4 of view, all you need is a high school diploma in
5 order to sit and take the test.

6 A That's not to say that anyone with a
7 high school diploma could pass the test, but--

8 Q Agreed. Not everybody with a high
9 school diploma passes the driver's test, either.

10 A Or the bar exam.

11 Q Or the bar exam, or anything else.

12 A Sure.

13 Q Are you an AIS certified scorer?

14 A I am not.

15 Q Okay. Equipoise has arrived back.
16 Come on. We have to have a little
17 levity here. Right?

18 A I had all my scoring checked by
19 someone who's certified.

20 The name of someone else who's on the
21 bill, whose name I forgot to mention earlier,
22 Patricia Carroll, registered nurse and certified
23 AIS scorer.

24 Q Okay. Back to where I started.

25 If, in fact, the injury is

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Fisher - By Mr. Caldwell

147

1 postmortem, it wouldn't enter into the AIS
2 evaluation at all?

3 A Correct.

4 Q Okay. And you're saying that it's
5 premortem and it still doesn't enter into the AIS
6 score because in manipulation of the
7 evaluation--not manipulation--in the calculation
8 of the resulting number, it's not high enough to
9 be computed?

10 A Yes. From a strict AIS scoring for
11 the overall reconstruction, I thought it was
12 important.

13 Q So when you concluded 27 on a scale
14 of 1 to 75; is that correct?

15 A Yes.

16 Q Yes.

17 A So that's based on the blunt trauma
18 that is available to examine and evaluate post all
19 of the thermal damage to the body.

20 Q But the whole scale runs from 1 to
21 75.

22 A Yes.

23 Q 75 being certainly fatal.

24 A Well, there's a strong correlation
25 between--there's a strong correlation between the

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Fisher - By Mr. Caldwell

148

1 AIS--between the ISS score, which is a calculation
2 made from numerous AIS scores, there's a strong
3 correlation between ISS and fatality.

4 Any single AIS 6 score automatically
5 gives you 75. And as we recall from Dr.
6 Arslanoglu's deposition, there are people who
7 survive AIS 6 injuries. So it's not almost
8 certainly fatal, but certainly getting in that
9 direction.

10 Q As the numbers go up, is it linear or
11 asymptotic?

12 A It's--it is nonlinear.

13 Q Is it plateau?

14 A No. I think once you--once you hit
15 75, it--

16 Q Not 75.

17 Is it 1 through 10 and then 11
18 through 20?

19 A Oh, in--

20 Q In gradation.

21 A Stepwise?

22 Q Yes.

23 A Not really.

24 Q But it's not straight linear.

25 A No. If you were to plot out fatality

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Fisher - By Mr. Caldwell

149

1 based on ISS score, it's a jagged line.

2 Q A jagged line.

3 A Statistically, if put error bars on
4 there, you'll see the error bars on some points
5 are bigger, some are smaller. It's a--it's a
6 rough fit.

7 Q But if you did a regression analysis,
8 you would find some fit?

9 A Yes.

10 Q Yes.

11 A Okay.

12 Q Okay. So I'm asking you about the
13 fit.

14 Based on regression analysis, where
15 would the fit be for a 27?

16 A For a 27--I looked at a paper by
17 Osler. The problem with the paper by Osler is
18 that their selection was people who made it to the
19 hospital alive, and they were scoring will this
20 portion die at the hospital.

21 Q A little adverse selection.

22 A So it completely eliminates all the
23 people who died in the field.

24 Q And didn't make it, right. Okay.

25 A I think Osler was in the 30/40

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Fisher - By Mr. Caldwell

150

1 percent range at 27 fatality. But again, I
2 could--I could look it up.

3 Q I'm just trying to get a sense of
4 what we're talking about on your chart.

5 A Yeah.

6 Q And, by the way, who did the coding
7 chart that I got as part of the supplement from
8 Mr. Cook?

9 Did you do that, or was it one of
10 your assistants?

11 A I forget whether I did it or Dr. Ravi
12 did it. But, then, Nurse Carroll did the checking
13 and the confirmation and discussed with me all the
14 refinements based on the rules, and that sort of
15 thing.

16 Q By the way, the whole use of this
17 particular scale and the way that we're doing it
18 is creative adaptation. It wasn't designed for
19 the function that we're putting it to. Correct?

20 A Well, it's used for a variety of
21 different things. But in terms of separating two
22 separate kind of--two different kinds of injury,
23 blunt trauma versus thermal, that's a creative
24 adaptation, that's correct.

25 Q I believe one of the criticisms that

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Fisher - By Mr. Caldwell

151

1 you had of plaintiff's biomechanical guy was that
2 something was scored as zero. Right?

3 A Oh, yes. He scored blunt trauma to
4 the head as AIS zero, which basically is--it's
5 basically saying there is no blunt trauma to
6 the--to the head.

7 What I was pointing out was that Dr.
8 Bundock found no blunt trauma to the head because
9 most of the head, much of the head, important
10 parts of the head were gone and, therefore, could
11 not be evaluated.

12 As Dr. Bundock said in her testimony,
13 there certainly could have been significant head
14 trauma that we just don't know about.

15 Q Right. But in the law, we don't deal
16 with what could have been or what's possible. We
17 have to deal with what's provable by a
18 probability. Right?

19 A Yes. So that's--

20 Q So to say something and to rule out
21 something is we're talking about possibility, not
22 probability.

23 A So that's where I bring my
24 biomechanical analysis to bear.

25 Q But just as a general rule, when a

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Fisher - By Mr. Caldwell

152

1 doctor says and you see that they can't R/O, can't
2 rule out something, they're just talking about the
3 possibility that something might exist. Right?

4 A Yeah, sure.

5 Q And so just to say that you can't
6 rule it out is not proof that it's there.
7 Correct?

8 A Yes. And, conversely, absence of
9 evidence is not evidence of absence.

10 Q Right.

11 So just because we say that we can't
12 rule out that there's such things as pink
13 elephants doesn't mean that there are pink
14 elephants.

15 A Correct.

16 Q Or, on a slightly more scientific
17 basis, we can't say that we can't rule out the
18 fact that there's life on Mars because we haven't
19 gotten that far yet. Right?

20 A Correct.

21 Q And it's not the zero--is it the zero
22 itself that you find to be an inappropriate
23 choice, or are you saying it's because there's
24 evidence that should support a finding of some
25 number other than zero?

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Fisher - By Mr. Caldwell

153

1 A Yes. I would say there's evidence
2 that should support a finding other than zero.
3 He's just taking the absence of evidence as
4 evidence of absence.

5 Q But we agree that the loss of the
6 calvarium is a postmortem change to the body?

7 A Correct.

8 Q And the exposed dura, it's exposed
9 because of the postmortem change--

10 A The calvarium is gone.

11 Q Right. One thing leads to another.

12 A Yes.

13 Q Okay. And then the epidural
14 hemorrhage, same thing. Cause and effect. If the
15 calvarium goes, then it leaves behind an epidural
16 hemorrhage?

17 A Or that could be blunt trauma. We
18 don't know one way or the other.

19 Q Because in your analysis, certainly
20 the face is coded as zero in your analysis?

21 A For there were no fractures of the
22 face?

23 Q Right.

24 So, for the face, we're talking about
25 from the ears forward. Right?

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Fisher - By Mr. Caldwell

154

1 A Yes.

2 Q And from the chin to the calvarium.

3 A Correct.

4 Q All right.

5 A External is a separate category from
6 face. So that's where you're going to get the
7 thermal.

8 Q Yes. I understand that.

9 A Okay.

10 Q But for purposes of your scoring,
11 Category 2 here, the face was zero.

12 So, based on that scoring, all of Mr.
13 Medina's facial features, from his ears all the
14 ways around the front, from the chin all the ways
15 up to where the calvarium starts, just above the
16 eyebrows, no evidence of any injury whatsoever.

17 A So, again, the external is scored
18 separately.

19 Q Right.

20 A What we're scoring in the face would
21 be things like bony fractures, and in contrast to
22 the calvarium, the bones of the face were
23 available for Dr. Bundock to examine.

24 Q But there were no fractures of the
25 eye orbits or the jaw, there's no damage to the

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155

1 teeth. Right?

2 A Correct. So that's scored zero,
3 because she had the evidence in front of her, she
4 examined it, and she found no injury.

5 Q But at the same time, he could have
6 been alive and had his face burned off during this
7 accident. Right?

8 A That will score under--

9 Q External.

10 A --external, yes.

11 Q And you would categorize the burns
12 that are evidenced in the photographs as fourth
13 degree?

14 A I have not--I have not tried to
15 quantify the degree of the burns.

16 Q Well, do you have a general sense of
17 degrees of burns?

18 A I do. And I forget the actual burn
19 depth for fourth degree, but we're probably at the
20 highest degree of burning in this case.

21 Q And you're not a fire causation or
22 originator or duration--

23 A I am not.

24 Q And the AIS, does it or does it not
25 take into consideration the soot that was found in

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156

1 Mr. Medina's larynx and throat?

2 A It does not.

3 Q But certainly there are circumstances
4 that you can think of where someone could just die
5 from asphyxiation and not demonstrate any other
6 injuries. Right?

7 A Yes.

8 Q So does your AIS--does your
9 analysis--excuse me.

10 So does your expert opinion take into
11 consideration the extent to which Mr. Medina might
12 have been exposed to a flash fire, as described by
13 Dr. Bundock?

14 A I'm sorry. Could you repeat that,
15 please?

16 MR. CALDWELL: I'll ask the court
17 reporter to read it back.

18 (The reporter reads the following:

19 "QUESTION: So does your AIS--does
20 your analysis--excuse me.

21 "So does your expert opinion take
22 into consideration the extent to which Mr.
23 Medina might have been exposed to a flash
24 fire, as described by Dr. Bundock?"

25 A My analysis certainly considers that

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Fisher - By Mr. Caldwell

157

1 he was exposed to a flash fire.

2 Was there a particular part of my
3 opinion that--

4 Q Yes. Your opinion says that at some
5 point during the course of the accident, the
6 tractor and trailer were subjected to fire.

7 A Yes.

8 Q When is that sometime, or doesn't it
9 matter for your analysis?

10 A I would say it is sometime between
11 when it's on the bridge deck, I mean, during
12 these--we have Kevan Granat's diagram that shows
13 positions 4, 5, 6, 7 and 8, and within a couple of
14 seconds, it's over the bridge and on the ground.
15 Those couple of seconds are not affecting my
16 analysis one way or the other.

17 Obviously, that's important for Mr.
18 Olson, who's trying to determine where the fire
19 began.

20 For me, that second-by-second
21 distinction of where the fire started in terms of
22 contributing to Mr. Medina's injuries is not a
23 large period of time.

24 Q It's academic to you.

25 A It's much more important to Mr.

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Fisher - By Mr. Caldwell

158

1 Olson's analysis, yeah.

2 Q And you do recall that Dr. Bundock,
3 when asked about the seat belt, you said that she
4 thought that that was irrelevant to her
5 determination of cause of death. Correct?

6 A Correct.

7 Q Perhaps I missed it, but can you tell
8 me where in your report you actually conclude what
9 injuries or combinations of injuries were fatal to
10 Mr. Medina?

11 A I don't think I concluded that in my
12 report.

13 Q You would agree with me that a word
14 such as "large" or "small" is descriptive rather
15 than mathematical?

16 A Yes.

17 Q So when you describe something as a
18 large X, it depends on what you mean and what the
19 hearer believes you mean when you use that
20 description?

21 A In the context in which it's used.

22 Q Okay. Well, when you describe
23 something as a large laceration, that's a
24 subjective interpretation of a physical event.
25 Right?

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Fisher - By Mr. Caldwell

159

1 A Yes. And I think for some of the AIS
2 scoring purposes, they actually will use those
3 sometimes to distinguish different AIS levels.
4 They'll say a small laceration, a large
5 laceration. A laceration not further specified
6 gets one score. One described by the diagnosing
7 physician as large gets scored differently from
8 one described as small.

9 So there is some meaning that can be
10 quantified in, for example, the AIS coding
11 system.

12 Q Well, on page 12 of your report, in
13 the large paragraph, where it says, "Mr. Medina
14 also had a large laceration of his right abdominal
15 wall....," that is your interpretation of the
16 laceration?

17 You didn't quote the word "large."

18 So that's your choice of word.

19 Right?

20 A So what I have listed--

21 Q Not what you have listed. Let's
22 start with what you have written.

23 "Mr. Medina also had a large
24 laceration of his right abdominal wall..."

25 First of all, that's what you wrote.

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Fisher - By Mr. Caldwell

160

1 Right?

2 A It is what I wrote.

3 Q Second of all, there's no quotation
4 marks.

5 So you're not saying that you picked
6 that from somebody else's description. Correct?

7 A I may be paraphrasing. I might not
8 have the precise term that--my use of the word
9 "large" would generally mean that I am reflecting
10 what was used earlier. So I looked earlier in my
11 report to what Dr. Bundock--where I summarized Dr.
12 Bundock autopsy findings and the word "large" is
13 used there as well, which suggests to me that
14 "large" is her word.

15 So I will just--

16 Q Try page 103.

17 A Or page 3 in her final autopsy
18 report, "There is a large laceration to the right
19 lateral abdominal wall tearing perpendicular to
20 muscle fibers."

21 Again, generally, I would not put
22 that word there unless that was supported by
23 someone else's factual evidence, in this case Dr.
24 Bundock's.

25 Q Want to try page 103 in her

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Fisher - By Mr. Caldwell

161

1 deposition?

2 Sorry. Not page 103. Page 90.

3 You don't have her whole deposition?

4 A I don't have the whole thing, but I
5 may have--I'm sorry. Which page?

6 Q I believe it's page 90 that I want.

7 A I have an excerpt from page 90, at
8 the beginning, but I may not have the...

9 Yes. "Large" is the word she used on
10 page 89, line 24 of her deposition. "There is a
11 large laceration of the abdomen" was her
12 statement.

13 Q But on page 90, this is Mr. Cook's
14 question, I believe.

15 "You talked a little bit about the
16 abdominal laceration. Did you make any indication
17 either in your report itself or in your--your
18 autopsy notes of the size of that abdominal
19 laceration?

20 "ANSWER: Well, it would be shown in
21 the picture. So sometimes a picture is worth a
22 thousand words. I do not have a measurement
23 documented in the text."

24 Right?

25 So that we don't know the size.

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Fisher - By Mr. Caldwell

162

1 A Well, we do. As she said, "a picture
2 is worth a thousand words."

3 And we have those pictures.

4 Q Notwithstanding all of that, you
5 coded under the section "External" of your AIS
6 that the "large laceration of the right lateral
7 abdominal wall w/partial evisceration of the
8 intestine has a tube." Correct?

9 A Correct, based on Dr. Bundock's
10 diagnosis of a large laceration to the abdominal
11 wall.

12 Q Okay. And in the very next section
13 of the "External," you and/or your associate score
14 the "Charred skeletal muscle plus bone are exposed
15 over approximately 90 percent of the body."
16 "Description" is "Burns, second and third degree
17 partial and full thickness, including incineration
18 greater than 90 percent."

19 And that was scored as 6. Correct?

20 A Yes.

21 Q The scoring is premortem. Correct?

22 A In that case, it would be
23 postmortem.

24 Well, to what degree it's pre or
25 postmortem, we don't know. Obviously, he was not

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Fisher - By Mr. Caldwell

163

1 alive for 45 minutes.

2 Q No. According to Dr. Bundock,
3 probably no more than a couple of minutes.

4 A Yes. So this degree of burning came
5 about in 45 minutes of fire.

6 Q Well, no. Later than 45 minutes.
7 This degree of burning could have happened at five
8 minutes, 10 minutes, 30 minutes.

9 Certain things happened later, such
10 as, perhaps, the blowing off of the top of the
11 skull. But the third and fourth degree burns that
12 he suffered could have very well probably occurred
13 much sooner in the fire sequence.

14 A Yeah. To what what degree those are
15 pre or postmortem, we don't know.

16 Q Dr. Bundock concluded that he
17 survived the accident to the point where he was on
18 the ground; does she not?

19 A Yes. And--

20 Q So to the extent that there was a
21 fire that starts at or on the road deck and
22 continues thereafter, Mr. Medina is exposed to
23 that fire from that time onward. Correct?

24 A It depends on when the fire starts
25 and what he's exposed to. His body is--we have

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Fisher - By Mr. Caldwell

164

1 tissue which is uncharred on this piece of fence,
2 which indicates that Mr. Medina himself, this part
3 of Mr. Medina's body was not burned at the time
4 the fence penetrated the truck and then was drawn
5 back out from the truck, which...

6 So when you say Mr. Medina was
7 exposed to, are you saying--are we saying that
8 existence of a fire means exposure, or are we
9 saying exposure of his body directly to fire?

10 Q In your analysis, why is it so
11 important that this fence penetrates the truck,
12 Mr. Medina's body and then exits?

13 Isn't the only reason it's so
14 important that you stand on this so much is
15 because it coordinates with Mr. Granat's analysis
16 of which way the truck was turning?

17 A No. I had--I had concluded that
18 before he presented his analysis.

19 Q Do you have anything to document
20 that?

21 Do you have any file notes of
22 notations?

23 You're a scientist.

24 When you're doing your analysis and
25 doing your investigation, didn't you make

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Fisher - By Mr. Caldwell

165

1 contemporaneous notes of what you were finding and
2 what you were concluding?

3 Didn't you do that, sir?

4 A These were prepared--no, I did not.

5 Q Okay. But isn't that considered
6 normal scientific technique so that as you're
7 observing something, you're recording your
8 observations so that you can go back and check
9 them?

10 A I do not operate in that way, sorry.

11 Q I'm not asking whether you operate
12 that way.

13 I'm talking about what would be
14 considered usual and customary scientific
15 technique when you're evaluating something.

16 Wouldn't you expect a prudent
17 scientist to record their observations as they
18 make them minute by minute--

19 A No.

20 Q --day by day?

21 A Some people do. Some people don't.

22 Q And you don't.

23 A The answer is no.

24 Q And so all we have for it is your
25 word that sometime between the time that you got

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Fisher - By Mr. Caldwell

166

1 the materials from Mr. Cook's office and the
2 meeting in April of '13, you came to the
3 conclusion that the stuff on the fence was blood
4 and body matter.

5 A Yes. That's--

6 Q And that conclusion is undocumented
7 in your file.

8 MR. COOK: Object to form.

9 You can answer.

10 A Well, truth always makes things
11 easier to present, too, and in this case I had
12 reached that conclusion before I spoke with Mr.
13 Granat. So...

14 Q You don't have any disagreement with
15 plaintiff's biomechanical application of the AIS
16 and the arithmetic aspect of it--

17 A No.

18 Q --the formula taking--

19 A No.

20 Q --the square root and adding it up
21 and--

22 A No. I--no.

23 Q Your criticism boils down to what you
24 described before as the absence of evidence is not
25 evidence of absence.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

167

1 A In part.

2 Q Where is there?

3 A I believe we can start to fill in
4 these parts by doing biomechanical analysis,
5 looking at the occupant kinematics, looking at the
6 vehicle--looking at the vehicle dynamics,
7 appreciating whatever injuries Mr. Medina has.

8 Q All with the goal of establishing
9 what?

10 We know what the end result was. We
11 know what injuries he had. It's not
12 hypothetical.

13 A We know--

14 Q They're real.

15 A We know in part what blunt trauma he
16 had.

17 Q So tell me what additional injuries
18 you're concluding, within a reasonable degree of
19 scientific certainty, he sustained that were
20 obscured by the fire.

21 A I believe he had head injuries which
22 were obscured by the fire.

23 Q Based on what?

24 A Based on the fact that when this
25 truck hits the ground and the cab hits the ground,

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Fisher - By Mr. Caldwell

168

1 he's moving at 30 miles an hour toward the rear of
2 the cab and striking his back hard enough that
3 he's fracturing nine ribs on the right side of his
4 body.

5 So where's his head during that
6 impact?

7 His neck is not injured. His neck,
8 which survived the fire, Dr. Bundock was able to
9 take a close look at. There's no injury at all to
10 his neck.

11 Q No subdural hematomas?

12 A Yeah.

13 So--

14 Q No fractures?

15 A Right.

16 So if you dropped the body onto a
17 surface at 30 miles an hour, you have a couple of
18 choices: either the head and the body impact the
19 structure and stop, or the body impacts the
20 structure and, again, hard enough to break nine
21 ribs and stops, the head keeps moving, because it
22 misses the structure, and Dr. Bundock diagnoses
23 severe neck injuries.

24 We don't have that here. That tells
25 us the head came to a stop. The absence of neck

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Fisher - By Mr. Caldwell

169

injury tells us the head came to a stop and the body came to a stop, and we know that the body came to a stop, such that he fractured nine ribs on the right side of the body.

That's consistent with a 30-mile an hour velocity. Twenty to 30 miles an hour, cadaveric tests have shown you can get these kind of rib fractures. Studies have also shown that at 20 to 30 miles an hour you get severe head trauma. You get skull fractures. You get--

Q You do, but not in all instances. Right?

The studies also show that at 30 miles an hour people walk away from accidents with no injuries whatsoever.

A I'm not talking about a car moving 30 miles an hour. I'm talking about your head hitting a surface at 30 miles an hour. There's no walking away from that.

I have in my binder or in the bibliography of my report numerous papers where cadaveric heads were dropped onto various surfaces at different speeds. And when you get up into a range of 15, 20, particularly 30 miles an hour, you're getting skull fractures in almost all

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Fisher - By Mr. Caldwell

170

instances, and serious brain trauma.

That's not recorded in Dr.--or in Mr. Medina's case, because his calvarium was no longer available to diagnose.

Q The back of his skull was, wasn't it?

A Let's take a look.

(8 1/2" by 11" color photograph received and marked Exhibit F-9 for identification, and

8 1/2" by 11" color photograph of a skull received and marked Exhibit F-10 for identification.)

A So--

Q No, no. There's no question pending at the moment.

So, in F-9, besides the absence of the calvarium on the top of Mr. Medina's skull, what else is it that you wanted show me?

A Well, by calvarium, we're talking about all of the skull, from the base of the skull up. So when you say--

Q No. It's not from the base of the skull up. That's not what the definition of calvarium is. You know that. The definition

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Fisher - By Mr. Caldwell

171

that's been used throughout the course of this proceeding is from the eyebrows up, not the base of the skull.

A Whose definition is that?

I'm speaking in an anatomical sense.

Q You disagree that that's the definition of what the calvarium is, that it's not from the eyebrows up?

A On the front of the head, that's fine.

Q No. Circumference, all around the circumference, from the eyebrows up. You cut a section through the head, starting at the eyebrows, from front to back, and you saw the whole thing off.

You're disagreeing that that's not the definition of what the calvarium is?

A That is not the definition of the calvarium.

Q So if Dr. Bundock said that, she's wrong?

A Well, let me point out what Dr. Bundock said.

Dr. Bundock said:

"And by entirely missing, what did

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Fisher - By Mr. Caldwell

172

you mean by that?

"Well, I couldn't identify the frontal," parietal--sorry--"frontal, temporal, parietal or occipital bones that comprise the bulk of the skull."

Q And so where is the eyebrow arch on that diagram?

A That would be right here.

Q Right.

And all the things that you've described are above that.

A Except the temporal bone and most of the--and much of the occipital, all of which she says she could not identify on Mr. Medina's skull.

Q And your conclusion is?

A Most of his head is gone.

We're not talking about a little spot that's missing where, Hey, unless we hit him there, he has a fracture there, there is no head trauma.

We're talking about from the base of the skull up, everything is gone. The entire cranial vault could have had fractures that we will never know about from the physical evidence.

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Fisher - By Mr. Caldwell

173

Now, we can reconstruct by looking at the vehicle dynamics, by looking at the occupant kinematics, by knowing how the rest of his body, by looking at the injuries that he does have, by looking at the nine rib fractures he has on the right side of his body, the absence of neck fractures and say, There's a pretty good chance he's hit his head significantly enough to have skull fractures and severe head trauma.

Q Only if your initial assumption about him being unrestrained is true. Right?

A If he's sitting in his seat in astronaut position when the back of the chassis hits the ground--

Q Then we have to take away his rib fractures, which we know he had--

A One step at a time. I'm plugging your holes for you, as you like to say.

Q So one of the alternatives is that he's actually seated in the driver's seat, because he was wearing his seat belt, and he's going down in an astronaut position.

A Okay.

Q Yes?

A Yes.

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Fisher - By Mr. Caldwell

174

Q Okay. So that would eliminate all of your analysis about him being between the seat and crashing into the back of the cab at 30 miles an hour. Correct?

A But we have to--

Q Correct?

A We need to do two other things, though.

Q Before I can agree to your hypothetical, I have to point out the other pieces we're going to have to account for, which is the mechanism of the rib fracture now and the state of the driver's seat.

Q The rib fractures could also be caused by the astronaut position and there's the potential for crush damage when he comes down, he's bouncing around, he's got the seat belt across him, he comes down on the back of the seat and fractures his ribs.

A In layman's terms, perhaps. Not from a biomechanics perspective. We're not going to do that.

Q You may not want to do it, but we can do it.

A Well, we have some studies here that

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Fisher - By Mr. Caldwell

175

will support that.

Q Which studies specifically?

A The Cavanaugh studies would be supportive, the Pintar study in the bibliography of my report there.

Q What other hole do you want to plug?

A Let's take a look at the driver's seat.

Q The rib fractures are there. That's a hole we're not going to be able to plug. The driver's seat is more of a consistent width.

Q You mean the frame, the padded frame?

A Yeah.

Q I have looked at a number of high-speed rear-end collisions, and you get a 15-, 20-, 25-mile-per-hour delta-V vehicle, and it usually yields the seat frame back.

Q Now, I can't see the base of the seat well in these pictures, but I went through from every angle that I could and tried to find both the seat pan and the seat back, and I do not see the kind of seat back affirmation where it's pushing the entire seat back, back relative to the seat pan.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

176

Q I have not studied the structure of the Freightliner seat--

Q But the armrests are in the wrong position, isn't that true, as shown in the pictures?

A The armrest is twisted around rearward, which is--

Q 180 degrees in the wrong direction.

A It's certainly consistent with the vehicle impacting the ground.

Q What would be holding it in place in its prefire condition that would prevent that rotation?

A I'm sorry. What would--

Q In its prefire condition--

A Yes.

Q --it's oriented 180 degrees the other way. Right?

Q If you tried to rotate it through its range of motion from down to being up in its stored position, there's something that prevents it, is there not, from going back another 90 degrees?

A I don't know if there is or not.

MR. COOK: You're assuming that the

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Fisher - By Mr. Caldwell

177

armrest was down at the time of the impact?

Q There's a couple of choices. Either it's up or it's down.

A In this particular picture, it ends up 90 degrees in the wrong direction. Correct?

A If it started in the up position, it's 90 degrees in the wrong position. Correct?

A This is certainly consistent with the ground impact.

Q When the back of that cab hits the ground, even if this is--if this is in a stowed position, even if there is, you know, a little tooth there, or something, to keep it from rotating back more, the inertia of that armrest alone could break it off and rotate it into this position prior to any prior damage.

Q You're assuming that Mr. Medina is not seated in the astronaut position with his arms down braced against the armrest.

A I'm just saying how it could get into that position from the impact.

Q Right. And I'm saying that if you add another fact that Mr. Medina is seated in the seat in the astronaut position and then it wouldn't get that way through impact because his

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

178

arms would be pressed down against it.

A But we know that's not the case, because he's not going to have rib fractures. And again, I would--

Q You're hinging your--

A --expect to see deformation of the--

Q You're hinging your--

A --more deformation of the seat back and--there was one picture that had the--there's some pictures where I was able to see the seat back relative to the seat frame, and I was looking for signs of seat back deformation.

And again, I see the seat back--

Q Is that the seat back or the seat bottom of the--the object with the round holes in it in the center of the picture?

That's the frame.

A Oh, this is for the--this is maybe the seat bottom of the passenger's seat. I can't see the seat bottom of the driver's seat in this.

Q Do you conclude, first of all, that it's the bottom of the seat or the back of the seat?

A This piece?

Q Not the frame.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

179

The portion with the holes in it, this portion underneath--I'm red/green color-blind.

Q This arrow that you have here that's leading to the driver's seat that bisects some object that's right behind it in the background, what's that?

A I'm not a hundred percent sure. I think that might be the seat pan of the passenger's seat. I wouldn't say that for certain, though.

Q Is it the pan looking from the top plane view, or is it looking from the bottom up?

A I think it's looking from the top down. And that's just estimating from the orientation of the rest of the seat frame.

Q Of note, the inboard armrest of the passenger's seat is also rotated completely rearward as well, consistent with that impact that wouldn't involve Mr. Medina holding on to it.

MR. CALDWELL: We don't have a number on this one or this one.

Q (8 1/2" by 11" color photograph, with the decedent's body, received and marked Exhibit F-11 for identification, and

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Fisher - By Mr. Caldwell

180

8 1/2" by 11" color photograph, with the passenger's and driver's seat frame, received and marked Exhibit F-12 for identification.)

Q So, let's recapitulate.

F-11 is the photograph with the two seats frames and--is that red, the red arrow?

A Yes.

Q Thank you.

Sorry. That's 12. The lower right-hand corner, that's F-12.

A F-12.

Q And F-11 is the one that has the stick figure of the decedent's body in the picture as well, and that's yellow?

A Yes. And we see the seat, yes, the seat frames viewed from the passenger's side.

Q And in F-12, this frame is considered the driver's seat frame, and this is the--

A That would be the outboard armrest of the driver's seat.

Q By the door.

A By the door.

Q By the door. Okay.

And that's the same as in F-11. This

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Fisher - By Mr. Caldwell

181

1 is the same, but a different angle, it's the same
2 piece of metal?

3 A That's the inboard armrest of the
4 passenger's seat.

5 Q The center, the passenger's center.
6 Right?

7 A Yes. Yes.

8 Q And we can tell that because this is
9 the L-frame shape of the seat--

10 A Correct.

11 Q --in F-11.

12 A Yes.

13 Q So this is the passenger's seat.

14 Okay.

15 And so that arm is rotated 90 degrees
16 from its stowed position if that's 180 degrees
17 from its operational position.

18 A Correct.

19 Q In F-12, this is the driver's seat
20 frame.

21 So the bottom of the picture is the
22 back and the top is the front, facing forward, if
23 we were to--

24 A The bottom is the--correct. So, as
25 we look at the photo, the thing closest to the

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Fisher - By Mr. Caldwell

182

1 photographer is the frame rail, that would be the
2 outboard side of the seat closest to the driver's
3 door, and just behind that we see another rail
4 parallel to the--

5 Q Again, we can see the joint down at
6 the bottom of the lower left corner of the
7 picture--

8 A Correct, down at the bottom.

9 Q --and the armrest is, again, either
10 90 degrees off from the stowed position or 180
11 degrees off from the operational position.

12 A Yeah. Or even beyond that.

13 Q Or even beyond that.

14 And, then, we were talking about the
15 seat pan. It appears that this is the lip and the
16 shape for the buttocks and the hips, and it
17 appears to be the top of the pan, and this appears
18 to be the bottom of the pan?

19 A I'm not a hundred percent sure
20 whether we're looking down on the seat. I see a
21 hole here. I know sometimes those are just for
22 aeration.

23 Q Right, for aeration.

24 A The seats have holes. So we might be
25 looking down at the top, almost perpendicular,

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Fisher - By Mr. Caldwell

183

1 straight down onto the passenger's side seat pan.
2 I'm not a hundred percent sure. I was looking for
3 some other photos that might give us a different
4 perspective on that.

5 Q But overall, the gist of your
6 position is that the rib fractures are indicative
7 of unrestrained motion at the tail end of the
8 accident, when Mr. Medina is propelled into the
9 right rear corner of the cab, and that's when he
10 breaks the ribs.

11 A Yes.

12 Q When does he break his leg?

13 A He may be tumbling as he goes back in
14 there. I have not identified that specifically.
15 He has fractures of his left leg and his left
16 arm.

17 Q Which are on the opposite side of the
18 body from where the rib fractures are.

19 A Yeah. So his back is hitting--again,
20 it's a 30-mile-an-hour impact, approximately 30
21 miles an hour, with structures in the sleeper area
22 of that cab.

23 Q But he didn't break his right
24 shoulder, his right arm, upper or lower arm, his
25 right elbow, or his right wrist.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

184

1 A No. It's hitting him on the right
2 side of his back.

3 Q Flush?

4 Is he going into whatever--

5 A Again, I have not specified--I have
6 not identified what structure it is. It would
7 be--it would be nice in cases, you know, where you
8 can look at a vehicle and identify witness marks
9 indicating contact.

10 In this case, we have a fire, and all
11 of those kinds of witness marks were gone. So we
12 don't have that assistance to help us specify what
13 was contacted. I know the general direction based
14 on kinematics.

15 Q And F-11, the general orientation of
16 the seat is towards and underneath the chassis.
17 Correct?

18 A Yes. It looks like, we'll call it
19 the second axle or the front dual axles of the
20 tractor appear to be more or less in the seat area
21 of the driver's and passenger's seat.

22 MR. CALDWELL: I'm sorry. Could
23 you read that back?

24 (The reporter reads the following:

25 "ANSWER: Yes. It looks like, we'll

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Fisher - By Mr. Caldwell

185

call it the second axle or the front dual axles of the tractor appear to be more or less in the seat area of the driver's and passenger's seat.")

Q Okay. In the seat area.

A Yes.

Q Okay.

A And as we see here, we see the steel belting from inside the tire more or less in the driver's seat.

Q Okay. And so the windshield area and the dash that we saw in the catalog, they are further under the chassis in F-11.

A If they separated with the cab and didn't stay attached to the chassis. And again--

Q There's no reason to believe that the windshield and the dash didn't stay attached to the cab as they fell as a unit, is there?

A I'm not sure. I don't know where the weak points are going to be and where that's going to separate. But--

Q But you didn't see evidence of that portion of the cab anyplace else, did you?

A No. We see, obviously, that part of the chassis burned as well. We see the

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Fisher - By Mr. Caldwell

186

gearshift. We see the steering column up on the chassis. So whether the rest of the instrument panel that was connected to and surrounding those stayed attached to the chassis and burned there versus separated with the cab and burned there, we don't know.

And, obviously, then, these, as we pointed out, these wheels, the rims of those wheels have landed more or less in the driver's seat, and the steel belting, which I guess is another indication that Mr. Medina was not seated there; otherwise, he would have been pinned there with the rim of that wheel in his lap.

Q Well, unless he survived and he was trying to stave his fall to the position where his body was found prone on the ground.

A Well, he's not going to come to rest with the wheel in his lap and then crawl out from under it. So that would be just one more piece of evidence.

Q If everything is falling tail first and the chassis hits and the cab continues downward to the right and you're saying that Mr. Medina's body is unrestrained, he's also going to continue even further downward and to the right.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

187

Correct?

A Correct. Toward the right rear corner of the cab. The cab hits the ground, comes to rest. The chassis, having been mostly stopped by the ground impact, now tips, lands flat, and the wheel lands in his seat.

MR. CALDWELL: Mark that 13, please.

(8 1/2" by 11" color photograph received and marked Exhibit F-13 for identification.)

Q In F-11, is the driver's seat uphill or downhill of the passenger's seat?

A I can't really tell. I can't really distinguish whether there's much of a hill there.

Q Well, you know that there's a hill.

A Well, the hill is oriented to our right, whereas the one seat is in the foreground and the other seat is in the background.

Q The street is in the background.

You're looking down the slope; are you not?

The picture is running uphill towards the top.

A Just a second.

Q Sure.

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Fisher - By Mr. Caldwell

188

You can see all the paper and stuff on the debris in the background.

A I'm just going to grab an overhead shot, because that will be helpful for me to orient.

Q Let me help you out.

We agree that the trailer floor is pointed 180 degrees the wrong way over the back of the chassis and the back of the chassis is pointed downhill towards the street. Right?

A Yes.

Q And in this picture that is F-11, the street is in the background--

A Yes.

Q --and the hill is running up into the picture.

A Yes.

Q So one more time, then, please.

Is the driver's seat uphill or downhill of the passenger's seat?

A The driver's seat is downhill, yes, of the passenger's seat.

Q Okay. So in the preposition of this picture, the driver's seat would have started uphill of the passenger's seat. Correct?

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Fisher - By Mr. Caldwell

189

1 A What do you mean by "in the
2 preposition of this picture"?

3 Q Well, before the cab comes lose in
4 your version of it going down and backwards to the
5 right, the passenger's compartment with the
6 driver's seat is going to be uphill and the
7 driver's seat is going to be to the left.

8 A Slightly, yes.

9 Q Yes. Your thumb is the driver's
10 seat.

11 A Yes.

12 Q My fifth finger is the passenger's
13 seat.

14 A Yes.

15 Q The chassis is coming down towards my
16 elbow. Right?

17 A And we discussed between like twelve
18 and one.

19 Q Right.

20 A So that's slightly--it's going to put
21 the driver's seat slightly higher.

22 Q Slightly higher and to the left. But
23 it ends up slightly to the right and slightly
24 below the passenger's seat. So the driver's seat
25 goes past the passenger's seat.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

190

1 A Correct. It rotates 90 degrees
2 counterclockwise in a plane view of the truck and
3 hits the ground and then the chassis comes down on
4 top of it, from our archeological investigation.

5 Q Have you accounted for the testimony
6 that says that the cab was leaning up against the
7 bridge pier and only came to rest after the fire
8 was extinguished some 45 minutes later?

9 A I was trying to figure that out,
10 because, as we identified, the wheels of the
11 chassis are a layer higher, archeologically, are
12 stacked on top of the driver's seat.

13 So we know that the floor of the cab
14 and the seats are in place when the chassis is
15 down, which suggests that, you know, it didn't
16 slide in--when the vehicle burned a while and then
17 the cab righted itself, the seats and the floor
18 didn't slides in under those wheels.

19 So I was wondering whether perhaps we
20 have separation of the right wall of the cab,
21 perhaps that's leaning against something, perhaps
22 that's why someone saw part of the cab leaning
23 against the pillar, which is to the right--

24 Q To the south, please. Right?

25 A To the east.

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Fisher - By Mr. Caldwell

191

1 Q To the east. The pillar is to the
2 east. Williams Street runs east/west. The slope
3 runs north/south.

4 A To the east.

5 So, yes, that's where the pillar is.
6 So the pillar is to the east of the cab, which
7 is--

8 Q With the back of the cab facing
9 east.

10 A With the back of the cab facing
11 east--

12 Q The inside of the cab facing west
13 towards the chassis.

14 A So the right rear corner of the cab
15 is toward that pillar. So if the cab is leaning
16 against that pillar, that would lift the left
17 front corner off the ground, if we're treating it
18 as a rigid body, and tilting it against that
19 pillar, which means it can't--which means those
20 seats can't be under the wheels, as we see in the
21 photos they are.

22 So we have to somehow reconcile these
23 disparate pieces of evidence, or the disparate
24 evidence with the testimony of witnesses who saw
25 part of the cab leaning against this pillar.

JACQUELINE KLAPP, CCR - (908) 782-0874

Fisher - By Mr. Caldwell

192

1 One possibility that I see is that we
2 can't treat that whole cab as a rigid body. It's
3 already started to tear open, it started to
4 separate probably by the damage it sustained to
5 its right side in the bridge impact and in the
6 fall and then the fence coming in and out of it,
7 which means maybe there's a portion of it leaning
8 against the pillar, which when it burns and then
9 drops ash down along the side of the pillar, and
10 that settling might be what the witnesses saw.

11 And again, that's trying to reconcile
12 just that piece of witness testimony with the
13 physical evidence we have before us. That's a
14 possibility that I see.

15 Q In your summary on page 6, you have
16 the fire chief saying that he "recalled that the
17 cab was facing uphill and north on the slope off
18 Williams Street..."

19 A Uphill. So the cab is facing--

20 Q Uphill.

21 A --about 45 degrees from uphill and
22 more northwest. The photos show us how it's
23 facing. The testimony--

24 Q Ultimately.

25 A Yes.

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Fisher - By Mr. Caldwell

193

1 Q There's also testimony that says that
2 that piece of the vehicle moved between the
3 beginning and the end of the event.

4 A Well, we've already discussed the
5 seats under the wheels, which we know again--

6 Q Is it your testimony that the wheels
7 are actually on top of the frame of the seats?

8 And, if so, which picture are you
9 saying shows that?

10 A You probably have something marked as
11 an exhibit. I think we looked at one from the
12 opposite side. F-12 does not quite show it.

13 Q "Show it," meaning what?

14 A Shows the rim of the wheel in the
15 driver's seat. We can see where the seat frame
16 comes down. We know that where this bracket
17 widens, we're going to start to get seat pan, and
18 we see lug nuts of the rim of the wheel pretty
19 close to the seat back and over where the missing
20 part of the picture would show the seat pan.

21 Let's see if we can find a different
22 angle on that.

23 Q Let me show you what I think might be
24 helpful. It was previously marked at Chief
25 Bucossi's deposition as Exhibit No. 2.

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Fisher - By Mr. Caldwell

194

1 That's a photograph looking up the
2 hill towards the back of the chassis, with the
3 trailer to the left. Correct?

4 A Yes.

5 Q And the seat frames that we're
6 talking about, or at least one of them is evident
7 to the right of the floor of the trailer.
8 Correct?

9 A Correct.

10 Q And the object, the blue object that
11 is there, that's the back edge of the cab.
12 Correct?

13 A Correct.

14 Q And certainly at least as to the rear
15 wheels, the picture shows that the rear wheels are
16 not on top of the seats. Correct?

17 A The third axle.

18 Q We can eliminate the third axle.

19 A Correct. It's the second axle.

20 Q It's the second axle that we're
21 talking about.

22 A Yes.

23 Q Okay.

24 MR. CALDWELL: Next, please.

25 (8 1/2" by 11" color photograph)

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195

1 received and marked Exhibit F-14 for
2 identification.)

3 Q F-14 is now--let's get an
4 orientation.

5 This is the front of the tractor
6 floor pointed in the wrong direction--

7 A Correct.

8 Q --downhill.

9 A Yes.

10 Q This is the axle that we're
11 interested in. Right?

12 A No. This is the rear--this is the
13 third axle.

14 Q I thought that's what you said, the
15 third axle.

16 A No. The second.

17 Q The second axle is in the
18 foreground. Excuse me.

19 A Yes. So we see the inner rim here.
20 The outer rim is fractured.

21 Q The seats, if they're anyplace,
22 should be in the lower right-hand corner of the
23 picture. Right?

24 A Yeah. We have part of the seat
25 here--

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196

1 Q Here.

2 A You're indicating the lower left-hand
3 corner of the picture.

4 Q Can I just--it's upside down. Excuse
5 me. I just need to... All right.

6 In that sense, you can see the
7 axle--you can see the wheel--excuse me. You can
8 see the wheel dug into the ground. Right?

9 It is deformed, the ground underneath
10 it, from the impact. Correct?

11 A Correct.

12 Q And there is no evidence of the seat
13 frames, either the passenger's or the driver's
14 seat frame, being under that wheel, is there?

15 A The third axle, under the third axle,
16 no.

17 Q And under the second axle, you can
18 also see that the ground is deformed. Right?

19 A I don't see the ground here. I see--

20 Q Maybe I'm seeing--as a matter of
21 fact, one of the wheels is, in fact, mostly
22 destroyed. Right?

23 There should be a dual--

24 A Exactly.

25 Q There should be two wheels here.

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Fisher - By Mr. Caldwell

197

1 A This is the inner tire, it goes on
2 the rim, and then we have--
3 Q The outer--
4 A The fractured part. But there should
5 be more rim here, which is gone.
6 Q And based on our archeological
7 analogy, there is no evidence of the seat frames
8 being underneath, is there?
9 A I think this is actually the seat
10 pan. Remember, we discussed before the hole for
11 the aeration. It looks like the seat pan is kind
12 of buckled in half underneath that broken rim.
13 Q But you identified--I believe you
14 started to identify that this is part of the seat
15 frame that we've seen in the other pictures.
16 A The seat back, correct. And I think
17 this is the seat pan, including the sheet metal
18 pan with the aeration hole, and the wheel seems to
19 be--that fractured rim seems to be plunked down
20 right in that seat pan.
21 Q I know you're not an accident
22 reconstructionist, but the fractured wheel, you
23 have no idea when that happened?
24 A No idea. I don't see the fractured
25 part there.

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198

1 Q Right.
2 A But it could be just outside the
3 field of view. I don't know.
4 Q Even assuming that this is the seat
5 pan, there's still no evidence that the seat frame
6 is, archeologically speaking, under that fractured
7 wheel?
8 A I don't know what's in the center of
9 the--in the center of the photo, we see a piece of
10 tubing with a little spring attached to it. I
11 don't know the structure of the seat, whether the
12 seat pan is suspended by springs on the seat
13 frame.
14 I've seen that kind of design
15 before. I don't know if that's the kind of design
16 we're looking at here. But if that's the case,
17 that would indicate that the front end of the seat
18 frame and part of the sheet metal seat pan are
19 under the fractured rim and the other rim ahead of
20 it, if this is the seat pan and this is part of
21 the frame for the pan and this is the frame for
22 the seat back.
23 Q So, 15 minutes ago we started talking
24 about plugging holes, like an astronaut, and you
25 said no, you were rejecting that because of the

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199

1 fractures to the ribs, and all of this leads to
2 your conclusion that there should have been or
3 must have been substantial head trauma based on
4 the dynamics of the accident that have all been
5 obscured by the fire.
6 A Correct.
7 Q But you can't prove that except by
8 interpolation. You don't have direct evidence of
9 that.
10 A I think we can demonstrate it to
11 reasonable degree of certainty. We know we have
12 rib fractures consistent with the 20- to
13 30-mile-an-hour impact. We know we stopped the
14 head at the same time, because he did not have
15 neck injuries, which means we have to bring the
16 head at 20 to 30 miles an hour to a stop.
17 Q You you're saying that the back of
18 the head and the back of the body all come to rest
19 at the same time because there's fractures to the
20 ribs, but no fracture to the neck. So you're
21 saying that the head didn't snap back.
22 A Correct. Everything has decelerated
23 from that approximately 30-mile-an-hour speed to
24 zero very suddenly, which causes trauma. It
25 causes trauma to the torso. It causes trauma to

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Fisher - By Mr. Caldwell

200

1 the head.
2 Q And all of this assumes, of course,
3 that there is the free fall necessary to achieve a
4 delta-V of 30 miles an hour.
5 A Well, we know there's a--
6 Q We know there's some change.
7 A Yeah. We know there's a fall to the
8 ground.
9 Q We know there's a fall to the
10 ground.
11 A The tractor goes over first, begins
12 its fall.
13 Q Begins its fall, right. But we don't
14 know whether it's free fall or not because there's
15 the other compounding factors of the fencing and
16 the counterweight of the trailer up on the road
17 deck.
18 A Well, the trailer is not hanging up
19 there. It's just supported there while it rotates
20 until it falls. So, the tractor begins its free
21 fall, the trailer is rotating, the front end
22 is--the front end is free falling, the rear end is
23 supported.
24 Q It's not free falling because it's
25 still attached to another object that still has a

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Fisher - By Mr. Caldwell

201

1 rest point--

2 A A support point.

3 Q A support point.

4 So it's not free falling--

5 A So that's why I said the front
6 end--the front end wants to free fall, the rear
7 end is supported. So we have the trailer--8 Q We have resistance from the trailer.
9 It's holding it back--10 A It's supported. So that, obviously,
11 the center of mass of the trailer wants to free
12 fall, and so it's going to rotate around that
13 support point.14 The tractor, on the other hand, once
15 it's unsupported, can more or less free fall,
16 except for the attachment of the kingpin to the
17 trailer, which again, relative to a 17,000-pound
18 falling trailer is not going to make a significant
19 difference, just like that fence that it tears
20 through or the cable that it pulls down with it
21 are not going to significantly slow the drop of
22 that 17,000-pound trailer.23 Q What's acting as the fulcrum between
24 the tractor and the trailer?

25 Your description of what's happening

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202

1 there, there has to be a fulcrum there that--

2 A You mean an attachment?

3 Q No, not between the tractor and the
4 trailer. But if the trailer is on the road or
5 touching the road, there has to be a point of
6 fulcrum. Right?7 A The weights are--the fulcrum is the
8 thing you put underneath to increase your
9 mechanical advantage.

10 What do you mean by--

11 Q Maybe it's the wrong choice of word.
12 You see that? That's the fulcrum.

13 Right?

14 A Yes. The fulcrum is the wedge.

15 Q The wedge.

16 A The wedge, right.

17 There's a fulcrum in your theory of
18 the accident, isn't there, that the trailer is
19 still up on the road and there is weight in the
20 back of the trailer from its wheels. Right?21 Q If the tractor and the trailer are
22 not both in free fall, the trailer is still acting
23 as a counterweight, in the simplest explanation,
24 to the weight of the tractor. The center of
25 gravity of the trailer is different than the

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203

1 center of gravity of the tractor.

2 A Yes.

3 Q Okay. And the rear wheels on the
4 trailer are operating physically through the
5 center of gravity pulling the rear end of the
6 trailer towards the road surface. Right?7 A Well, they're not--they're not
8 pulling it. They're just--they're supporting this
9 end, so when gravity tries to accelerate the
10 entire tractor-trailer toward the ground, it can't
11 accelerate the rear wheels. It can accelerate the
12 rest of the trailer.13 Q But at a certain point, based on the
14 angles involved, is the box of the trailer going
15 to come into contact with the edge of the curb and
16 the curb is going to act as a fulcrum?17 A As the wheels roll off and then the
18 end of the trailer contacts the curb?19 Q Based on your understanding of the
20 mechanics of this accident, does the bottom of the
21 trailer come into contact with the curb?22 A Oh, you would have to ask Mr.
23 Granat. I don't know whether that makes physical
24 contact or whether it's going fast enough that it
25 clears it without making contact.

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Fisher - By Mr. Caldwell

204

1 Q Assuming that it makes contact.

2 A So you're going to have some
3 frictional drag--assuming it makes contact, you
4 would have some frictional drag. It's probably
5 not going to be a significant effect on the speed
6 of the trailer. But Kevan Granat could answer
7 that question better than I could.8 My understanding is that,
9 particularly for the tractor that we're dealing
10 with, it's something relatively close to free
11 fall.

12 Is it a few miles an hour less?

13 Maybe.

14 But whether the head is hitting the
15 surface at 20 miles an hour or 30 miles an hour,
16 the risk for serious head trauma is very, very
17 high. We're kind of topping off the curve,
18 whether it's 20 or 30.19 Q Having said all that, your opinion is
20 still limited to the potential of head injury, but
21 not that it caused death. Correct?

22 A Correct.

23 Q Okay. In your report, can you just
24 turn to your bibliography section, please?

25 A Sure. Okay.

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205

1 Q Which of these references are you
2 saying are the ones that you're relying upon for
3 this interpretation and analysis that you've been
4 discussing for the last 10 or 15 minutes?

5 A For the risk of head trauma?

6 Q Yes.

7 A The Allsop study. The Gurdjian
8 study.

9 MR. CALDWELL: G-u-r-d-j-i-a-n.

10 THE WITNESS: Yes.

11 Q No. That's okay. I'm just helping
12 the court reporter.

13 A Hodgson. H-o-d-g-s-o-n.

14 Q I see the title of that one says,
15 "Fracture behavior of the skull frontal bone
16 against cylindrical surfaces."

17 That would seem to be a specialized
18 study that's not analyzing the forces and the
19 types of injuries that are present in this case.

20 A Yeah. I think they did a variety of
21 different head impacts there. So I would have to
22 check. That is a head impact study. I'm not sure
23 whether that was just frontal or whether that
24 included other parts of the skull.

25 I have it with me. I can take a look

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206

1 at it in a second.

2 Q Well, I assume I'm going to get all
3 of them on the thumb drive when I get it.

4 A Yes. In fact, they're all on the
5 thumb drive and...

6 Q I'm sorry. I didn't mean to cut you
7 off.

8 On the next page, are there any other
9 references--

10 A Yes.

11 McIntosh did a head impact study.

12 Nahum and Melvin, N-a-h-u-m and
13 M-e-l-v-i-n, that's a book, and in that book is a
14 chapter by Allsop, the same author of the first
15 study.

16 Q Is it on the thumb drive?

17 A That chapter is on the thumb drive.

18 Q Yes, the thumb drive.

19 A Schneider, S-c-h-n-e-i-d-e-r, "Impact
20 studies of facial bones and skull," and the Voigt
21 paper, V-o-i-g-t, and finally, the Yoganandan,
22 Y-o-g-a-n-a-n-d-a-n, "Biomechanics of skull
23 fracture."

24 Actually, while I'm looking at the
25 bibliography, the two Cavanaugh papers, so

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207

1 regarding the rib fractures, cadaveric studies
2 with rib fracture impacts, Cavanaugh
3 C-a-v-a-n-a-u-g-h, two papers, and the Pintar
4 paper, P-i-n-t-a-r, on the second page, both deal
5 with rib fractures.

6 Q One of the inherent limiting factors
7 of all cadaveric studies is that you're dealing
8 with a dead body and not a live person. Right?

9 A Yeah. So you're not going to have
10 muscles tension and those kinds of responses.

11 Q And the ability to react and
12 resistance and all the other things that a human
13 person, who's alive and conscious, might be trying
14 to do.

15 A Correct.

16 Q So all these studies have an inherent
17 limited applicability as a result of that.

18 A Those limitations are apparent at
19 lower speeds, where people can resist thousands of
20 pounds of force moving in a particular direction.

21 There have been studies that have
22 looked at--once you get to certain impact speeds,
23 the cadaveric studies are going to be very similar
24 to live human studies just because there's not
25 much you can do to change how you move in a

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208

1 30-mile-an-hour impact.

2 Q Right.

3 A A cadaver and a dummy and a live
4 person are going to be more or less the same way.

5 Q A hundred miles an hour is a hundred
6 miles an hour.

7 A Or 30 miles an hour. That cutoff is
8 probably in the teens somewhere.

9 Q Okay. What's the cutoff for the rib
10 fractures in terms of miles per hour for this
11 accident?

12 A So these kinds of rib fractures,
13 again, depending on the--

14 Q Sorry. Let's do it the other way.

15 What's the threshold--what's the
16 minimum speed at which these type of rib fractures
17 could occur, based on your training and
18 experience?

19 A It depends on the surface, how padded
20 it is. But they were showing things on even
21 padded surfaces at 20 miles per hour, on padded
22 surfaces at 15 miles an hour, they were getting
23 rib fractures.

24 Q What speed do you need to break the
25 bone in the leg?

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209

1 A It depends on how the leg is oriented
2 and what the constraints are. You can break the
3 leg at relatively low speeds or at a high speed.
4 It depends on--the leg, being a long bone--

5 Q Right.

6 A --it really depends on the
7 bending--or the loading mechanism. Are you
8 crushing it axially or getting kind of impacted
9 that buckles the bone in the middle, or are you
10 constraining an end and moving the other part of
11 the body so that you're bending.

12 Q Leverage.

13 A The forces can be--the forces can
14 range from high to low. If someone takes a fall
15 and happens to plant their knee in the right way
16 and gets it wedged so that when the rest of the
17 body rotates, it can be a relatively low speed
18 versus--

19 Q Low speed, high torque.

20 A Yeah.

21 Q A lot of variables, in other words.

22 A A lot of variables, which is why I'm
23 not real specific on the leg fracture. There's a
24 lot of things that could be contributing to that.

25 Q So it's not generally true to assert

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210

1 that a leg fracture would require more force than
2 a rib fracture.

3 A No. It would depend on many other
4 variables.

5 Q Have you published any articles
6 yourself?

7 A Yes.

8 Q On this particular subject?

9 A Nothing on this particular subject.

10 Q Anything relevant to the subject
11 matter we're discussing today?

12 I see you're included as a coauthor
13 on something.

14 A I don't believe so.

15 Is there another Fisher on here?

16 Q I'm sorry. Maybe I'm confusing
17 with--I thought I saw you as a coauthor.
18 Apparently not. You're not the right age bracket
19 for some of these studies.

20 A Correct.

21 Q As a matter of fact, for most of them
22 you're not the right age bracket.

23 A No. I have not published--I have
24 published some stuff on low-speed occupant
25 kinematics, probably not quite at this speed.

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211

1 But no, nothing spot on relevant to
2 this.

3 Q So of the six or seven, whatever,
4 that you gave me, which of these do you consider
5 to be peer review journals?

6 A SAE uses peer review. Forensic
7 Science International is a peer review journal.
8 Staff is peer reviewed, Staff Car Crash Journal.

9 Q Do you serve as a peer reviewer for
10 any journal?

11 A I have served as a peer reviewer for
12 a number of different journals, yes.

13 Q Have you served as a peer reviewer
14 for any of the journals that are listed in your
15 bibliography?

16 A I have served as a peer reviewer for
17 SAE World Congress, SAE papers. I have done peer
18 review for them.

19 Q What did you do your dissertation in?

20 A Lung trauma.

21 I have not done peer review for any
22 of the other journals. SAE is the only one on
23 this list.

24 Q Mechanistic, Clinical and Preventive
25 Correlations, is that peer reviewed?

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Fisher - By Mr. Caldwell

212

1 A I'm sorry. The--

2 Q The Gurdjian article.

3 A Gurdjian?

4 Q The Gurdjian article, is that--

5 A I think that's a book.

6 Q That's a book.

7 A I think it might be a book chapter.

8 In fact, yes. Chapter 6 is by Gurdjian.

9 Q By the way, when did you compile all
10 of this "Selected Bibliography"?

11 Is this before the April meeting you
12 had all this information about all these articles
13 in April of 2013 or earlier?

14 A The chest trauma, I believe I did.
15 The fire fracture, the fire related studies I
16 had--

17 Q So you're changing gears. Please
18 stick to authors so I can match them.

19 A Okay. So, by chest trauma, I meant
20 the Cavanaugh papers, and the Pintar. I think I
21 had those ahead of time.

22 The head trauma I may have had before
23 then. I know I pulled some head trauma literature
24 in response to a statement made by Dr. Manion in
25 his deposition about the absence of base of the

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Fisher - By Mr. Caldwell

213

1 skull fractures being indicative of no head
2 trauma, and which papers I pulled prior to the LEC
3 Meeting, in which I pulled the supplement, or a
4 little bit more, to show that calvarial fractures
5 often occur without base of the skull fractures.

6 After reading Dr. Manion's
7 deposition, I haven't sorted them in that way. I
8 have a folder in my file that says "Literature,"
9 and I drag papers into it, and as I'm reviewing a
10 deposition, I say, You know what, let me find a
11 few more papers that are on point for that issue,
12 and I will drag them into the--into that file.

13 What the timing is and when which
14 papers got dragged in, I don't know. And then
15 when I write my report, I look at what's in my
16 literature folder and write it up in the
17 bibliography.

18 Q I'm sorry. I confused your
19 publications, because, obviously, you're coauthor
20 of some articles.

21 So are there any of your own
22 publications that you could point me to as being
23 supportive of the positions that you've taken
24 today?

25 And the second related question is,

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214

1 are they on the disk?

2 A Not specifically. No, not
3 specifically. That is, there are no specific
4 publications that I have authored that I would
5 point to as being relevant to my analysis in this
6 case. But, no, I don't think I have provided all
7 of my publications on the disk. Everything in the
8 bibliography is on the disk.

9 Q I'm still trying to figure out what
10 changes in the epithelial cell plasma membrane
11 surface area, the static stretch is all about.

12 A It's an entire chapter of my
13 dissertation. I can tell you all about it.

14 Q Thank you. That's what your
15 dissertation committee was for, not me.

16 And then tell me about the selected
17 invited presentations where you were asked to be a
18 speaker.

19 A Yeah. That would be where I was
20 asked to come speak or where I was selected as a
21 speaker, a guest lecturer for--I think I have
22 lectures at universities in there where professors
23 asked me to come and speak to a class or speak at
24 a conference as a guest speaker, where I was
25 invited, as opposed to it was an open call for

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215

1 papers and I submitted a study.

2 Q I'm trying to understand where you're
3 invited to a presentation, and the second one that
4 talks about nursing 334/534, that sounds like a
5 course designation of third-year nursing and
6 first-year graduate nurses presentation.

7 A Yeah. That's a forensic science
8 class.

9 Q A forensic science class.

10 A At the University of Pennsylvania.

11 Q University of Pennsylvania School of
12 Nursing.

13 A Yes.

14 Q Okay. So, other than Widener, all
15 the other stuff appears to be in-house. When I
16 say "in-house," in-house to the University of
17 Pennsylvania.

18 A Well, again I'm not at Penn. I'm
19 at--

20 Q Yes. But at times you were at Penn.
21 You have since left Penn. All these presentations
22 are post leaving Penn. You're no longer a
23 graduate student there. They have asked you to
24 come back.

25 A Correct.

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216

1 Q What's the distinction between
2 low-energy automotive accidents and high-energy
3 automotive accidents?

4 A I don't have a particular cutoff, but
5 some people will say low-speed accidents,
6 high-speed accidents. But there are sometimes
7 accidents that occur at high speed, maybe a
8 sideswipe, where two vehicles are moving at 50 or
9 55, it's high speed, but they barely touch, and so
10 there's very little energy transfer.

11 So a lot of the analysis that goes
12 into determining how people move, how people
13 resist movement in a sideswipe of 50 miles an hour
14 might be very similar to a sideswipe at five miles
15 an hour.

16 So low energy was used in place of
17 low speed in order to capture the idea that some
18 of the absolute speeds can be high. But we're
19 looking at low-energy, minimal occupant
20 kinematics, resistible kinematics, those kinds of
21 things.

22 Q And in a collision between objects,
23 it's energy that's transferred from one to the
24 other, not momentum. Correct?

25 A It's actually momentum which

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Fisher - By Mr. Caldwell

1 is--momentum is transferred from one to another.
2 Energy often gets--energy often gets dissipated in
3 other ways.

4 So momentum is--momentum is always
5 conserved. Energy, of course, is always conserved
6 as well. But there are lots of things sometimes
7 hard to account for, whereas momentum is easier to
8 see. Energy can be lost in crush, in sound, in
9 injury.

10 Q So if a tennis ball is hit against a
11 30-mile wide, 100-mile high and 100-mile thick
12 wall, the wall still has momentum.

13 A Yeah. It moves very little. The
14 energy transfer is very lopsided.

MR. CALDWELL: Thank you, sir.

15 THE WITNESS: Let's indicate that I
16 want to review my transcript.

17 (The deposition of Joseph L. Fisher,
18 Ph.D., P.E., concluded at 3:30 p.m.)
19
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21
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23
24
25

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C E R T I F I C A T E

1 I, EDWIN SILVER (Certificate No.
2 XI00379), Certified Court Reporter and Notary
3 Public of the State of New Jersey, do hereby
4 certify that prior to the commencement of the
5 examination JOSEPH L. FISHER, Ph.D., P.E., was
6 duly sworn by me to testify the truth, the whole
7 truth and nothing but the truth.
8
9 I DO FURTHER CERTIFY that the
10 foregoing is a true and accurate transcript of the
11 testimony as taken stenographically by and before
12 me at the time, place and on the date hereinbefore
13 set forth.

14 I DO FURTHER CERTIFY that I am
15 neither a relative nor employee nor attorney nor
16 counsel of any of the parties to this action, and
17 that I am neither a relative nor employee of such
18 attorney or counsel, and that I am not financially
19 interested in the action.
20
21
22
23
24
25

Notary Public of the State of New Jersey

My Commission expires January 12, 2018

Dated: February 21, 2014

WITNESS'S CERTIFICATION

JOSEPH L. FISHER, Ph.D., P.E.

1 On , 2014 the foregoing
2 deposition was submitted to JOSEPH L. FISHER,
3 Ph.D., P.E., the witness, taken on February 18
4 2014, for his examination.

5 At which time the deposition was read by the
6 witness and any proposed changes desired were
7 subsequently entered upon an errata sheet and
8 attached to the transcript.
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Thereafter, the deposition was duly
witnessed and signed by:

Notary Public in and for the

County of

State of

My Commission Expires

JACOB L. FISHER, Ph.D. - 2/18/14		Condenselt™		* - acknowledged	
100 (p) 40:12 48:7	120 (p) 97:16	30-mile (p) 169:5	57 49:16 50:11	198:24 212:12 212:25	
101 (p) 40:12 48:7	130 (p) 4:14	30-mile-an-hour (p) 169:13	50:18 77:14 83:24	214:11 214:33 214:16	
102 (p) 40:11 41:18	140 (p) 4:17	129:11 183:20 189:13	91:13 92:1 102:4	215:4	
103 (p) 40:11 41:18	150 (p) 3:17 38:4	199:23 208:1	102:23 103:3 103:5	above (p) 24:16	
104 (p) 40:11 41:18	160 (p) 3:17 38:4	30/40 (p) 149:25	105:11 106:19 113:25	30:9 120:13 136:10	
105 (p) 40:11 41:18	170 (p) 3:17 38:4	300 (p) 85:4 140:22	114:5 115:14 115:16	141:20 141:22 154:15	
106 (p) 40:11 41:18	180 (p) 3:17 38:4	31 (p) 2:6	116:10 132:12 140:14	172:11	
107 (p) 40:11 41:18	190 (p) 3:17 38:4	17,000 (p) 142:13	157:13 170:8 170:11	above-entitled (p) 1:14	
108 (p) 40:11 41:18	200 (p) 3:17 38:4	17,000-pound (p) 22:2	179:23 180:1 187:8	194:25	
109 (p) 40:11 41:18	210 (p) 3:17 38:4	142:14 201:17 201:22	81 (p) 4:9	absence (p) 152:8	
110 (p) 40:11 41:18	220 (p) 3:17 38:4	119:7	89 (p) 161:10	152:9 153:3 153:4	
111 (p) 40:11 41:18	230 (p) 3:17 38:4	32-feet (p) 22:5	9 (p) 84:1 106:10	166:24 166:25 168:25	
112 (p) 40:11 41:18	240 (p) 3:17 38:4	22:8	106:11 106:18 109:5	170:17 173:6 212:25	
113 (p) 40:11 41:18	250 (p) 3:17 38:4	33 (p) 22:16	109:11 110:19 111:2	absent (p) 50:2	
114 (p) 40:11 41:18	260 (p) 3:17 38:4	334/534 (p) 215:4	112:18 112:25 114:2	absolute (p) 86:16	
115 (p) 40:11 41:18	270 (p) 3:17 38:4	360 (p) 116:23 117:20	115:20 117:2 117:6	89:22 216:18	
116 (p) 40:11 41:18	280 (p) 3:17 38:4	118:2	117:10 118:15 118:18	absolutely (p) 14:18	
117 (p) 40:11 41:18	290 (p) 3:17 38:4	180 (p) 5:3 112:15	120:21	33:13 34:2 65:4	
118 (p) 40:11 41:18	300 (p) 3:17 38:4	112:17 117:18 118:5	90 (p) 110:22 136:10	79:12	
119 (p) 40:11 41:18	310 (p) 3:17 38:4	118:14 129:20 121:7	161:23 161:6 161:7	abatement (p) 85:5	
120 (p) 40:11 41:18	320 (p) 3:17 38:4	121:11 176:8 176:17	161:13 162:15 162:18	academic (p) 157:24	
121 (p) 40:11 41:18	330 (p) 3:17 38:4	181:16 182:10 188:8	176:22 177:5 177:7	accelerate (p) 203:9	
122 (p) 40:11 41:18	340 (p) 3:17 38:4	187 (p) 5:6 65:23	181:15 182:10 190:1	203:11 203:11	
123 (p) 40:11 41:18	350 (p) 3:17 38:4	19 (p) 4:6 65:23	190:14 192:4 192:5	accelerating (p) 90:24	
124 (p) 40:11 41:18	360 (p) 3:17 38:4	19 (p) 37 (p) 57	908 (p) 1:25 2:8	91:3 91:4	
125 (p) 40:11 41:18	370 (p) 3:17 38:4	194 (p) 57	91 (p) 25:8 27:22	acceleration (p) 85:18	
126 (p) 40:11 41:18	380 (p) 3:17 38:4	2 (p) 83:2 87:14	93 (p) 4:11	89:15 90:12 102:11	
127 (p) 40:11 41:18	390 (p) 3:17 38:4	2 (p) 83:2 87:14	96 (p) 4:12	103:14 104:2 104:8	
128 (p) 40:11 41:18	400 (p) 3:17 38:4	2 (p) 83:2 87:14	986-1300 (p) 2:17	accelerations (p) 105:18 105:22	
129 (p) 40:11 41:18	410 (p) 3:17 38:4	2 (p) 83:2 87:14	a.m. (p) 1:20	accept (p) 13:7	
130 (p) 40:11 41:18	420 (p) 3:17 38:4	2 (p) 83:2 87:14	abdomen (p) 68:8	34:4 121:23 135:22	
131 (p) 40:11 41:18	430 (p) 3:17 38:4	2 (p) 83:2 87:14	161:11	accepted (p) 71:20	
132 (p) 40:11 41:18	440 (p) 3:17 38:4	2 (p) 83:2 87:14	abdominal (p) 52:9	4:19 82:5 92:4	
133 (p) 40:11 41:18	450 (p) 3:17 38:4	2 (p) 83:2 87:14	52:7 54:15 54:17	10:3 10:19 11:16	
134 (p) 40:11 41:18	460 (p) 3:17 38:4	2 (p) 83:2 87:14	61:3 61:21 64:19	11:16 17:11 17:11	
135 (p) 40:11 41:18	470 (p) 3:17 38:4	2 (p) 83:2 87:14	69:23 71:4 143:7	18:6 19:18 20:11	
136 (p) 40:11 41:18	480 (p) 3:17 38:4	2 (p) 83:2 87:14	143:19 143:21 144:20	20:13 20:20 20:23	
137 (p) 40:11 41:18	490 (p) 3:17 38:4	2 (p) 83:2 87:14	159:14 159:24 160:19	21:2 24:19 35:17	
138 (p) 40:11 41:18	500 (p) 3:17 38:4	2 (p) 83:2 87:14	161:16 161:18 162:7	50:15 61:25 62:23	
139 (p) 40:11 41:18	510 (p) 3:17 38:4	2 (p) 83:2 87:14	162:10	73:22 84:15 89:12	
140 (p) 40:11 41:18	520 (p) 3:17 38:4	2 (p) 83:2 87:14	ability (p) 207:11	88:23 92:20 105:21	
141 (p) 40:11 41:18	530 (p) 3:17 38:4	2 (p) 83:2 87:14	able (p) 102:12	115:9 115:12 118:21	
142 (p) 40:11 41:18	540 (p) 3:17 38:4	2 (p) 83:2 87:14	168:7 175:10 178:10	122:24 123:1 123:4	
143 (p) 40:11 41:18	550 (p) 3:17 38:4	2 (p) 83:2 87:14	about (p) 8:12	137:5 142:12 163:2	
144 (p) 40:11 41:18	560 (p) 3:17 38:4	2 (p) 83:2 87:14	8:16 8:19 12:19	157:5 163:17 183:8	
145 (p) 40:11 41:18	570 (p) 3:17 38:4	2 (p) 83:2 87:14	17:3 17:3 18:25	197:21 199:4 202:18	
146 (p) 40:11 41:18	580 (p) 3:17 38:4	2 (p) 83:2 87:14	22:14 23:18 24:4	200:20 208:11	
147 (p) 40:11 41:18	590 (p) 3:17 38:4	2 (p) 83:2 87:14	24:4 24:5 26:25	accidents (p) 17:9	
148 (p) 40:11 41:18	600 (p) 3:17 38:4	2 (p) 83:2 87:14	27:19 27:24 28:2	169:14 216:2 216:3	
149 (p) 40:11 41:18	610 (p) 3:17 38:4	2 (p) 83:2 87:14	29:12 29:19 29:20	216:5 216:6 216:7	
150 (p) 40:11 41:18	620 (p) 3:17 38:4	2 (p) 83:2 87:14	32:17 39:5 42:14	accomplish (p) 120:22	
151 (p) 40:11 41:18	630 (p) 3:17 38:4	2 (p) 83:2 87:14	42:15 45:9 47:2	according (p) 40:5	
152 (p) 40:11 41:18	640 (p) 3:17 38:4	2 (p) 83:2 87:14	50:4 52:17 53:15	88:23 92:20 105:21	
153 (p) 40:11 41:18	650 (p) 3:17 38:4	2 (p) 83:2 87:14	53:15 63:6 63:13	115:9 115:12 118:21	
154 (p) 40:11 41:18	660 (p) 3:17 38:4	2 (p) 83:2 87:14	65:4 70:10 74:18	122:24 123:1 123:4	
155 (p) 40:11 41:18	670 (p) 3:17 38:4	2 (p) 83:2 87:14	78:15 83:10 92:22	137:5 142:12 163:2	
156 (p) 40:11 41:18	680 (p) 3:17 38:4	2 (p) 83:2 87:14	102:15 103:17 108:23	157:5 163:17 183:8	
157 (p) 40:11 41:18	690 (p) 3:17 38:4	2 (p) 83:2 87:14	111:7 111:12 118:3	197:21 199:4 202:18	
158 (p) 40:11 41:18	700 (p) 3:17 38:4	2 (p) 83:2 87:14	118:13 118:14 121:9	200:20 208:11	
159 (p) 40:11 41:18	710 (p) 3:17 38:4	2 (p) 83:2 87:14	124:14 124:15 132:7	accidents (p) 17:9	
160 (p) 40:11 41:18	720 (p) 3:17 38:4	2 (p) 83:2 87:14	134:7 136:10 137:15	169:14 216:2 216:3	
161 (p) 40:11 41:18	730 (p) 3:17 38:4	2 (p) 83:2 87:14	143:18 143:25 149:12	216:5 216:6 216:7	
162 (p) 40:11 41:18	740 (p) 3:17 38:4	2 (p) 83:2 87:14	151:14 151:14 151:14	accomplish (p) 120:22	
163 (p) 40:11 41:18	750 (p) 3:17 38:4	2 (p) 83:2 87:14	152:2 153:24 158:3	according (p) 40:5	
164 (p) 40:11 41:18	760 (p) 3:17 38:4	2 (p) 83:2 87:14	161:15 163:5 165:13	88:23 92:20 105:21	
165 (p) 40:11 41:18	770 (p) 3:17 38:4	2 (p) 83:2 87:14	169:16 169:17 170:21	115:9 115:12 118:21	
166 (p) 40:11 41:18	780 (p) 3:17 38:4	2 (p) 83:2 87:14	172:18 172:22 172:25	122:24 123:1 123:4	
167 (p) 40:11 41:18	790 (p) 3:17 38:4	2 (p) 83:2 87:14	173:10 174:2 182:14	137:5 142:12 163:2	
168 (p) 40:11 41:18	800 (p) 3:17 38:4	2 (p) 83:2 87:14	192:21 194:6 194:21	157:5 163:17 183:8	
169 (p) 40:11 41:18	810 (p) 3:17 38:4	2 (p) 83:2 87:14		197:21 199:4 202:18	
170 (p) 40:11 41:18	820 (p) 3:17 38:4	2 (p) 83:2 87:14		200:20 208:11	
171 (p) 40:11 41:18	830 (p) 3:17 38:4	2 (p) 83:2 87:14		accidents (p) 17:9	
172 (p) 40:11 41:18	840 (p) 3:17 38:4	2 (p) 83:2 87:14		169:14 216:2 216:3	
173 (p) 40:11 41:18	850 (p) 3:17 38:4	2 (p) 83:2 87:14		216:5 216:6 216:7	
174 (p) 40:11 41:18	860 (p) 3:17 38:4	2 (p) 83:2 87:14		accomplish (p) 120:22	
175 (p) 40:11 41:18	870 (p) 3:17 38:4	2 (p) 83:2 87:14		according (p) 40:5	
176 (p) 40:11 41:18	880 (p) 3:17 38:4	2 (p) 83:2 87:14		88:23 92:20 105:21	
177 (p) 40:11 41:18	890 (p) 3:17 38:4	2 (p) 83:2 87:14		115:9 115:12 118:21	
178 (p) 40:11 41:18	900 (p) 3:17 38:4	2 (p) 83:2 87:14		122:24 123:1 123:4	
179 (p) 40:11 41:18	910 (p) 3:17 38:4	2 (p) 83:2 87:14		137:5 142:12 163:2	
180 (p) 40:11 41:18	920 (p) 3:17 38:4	2 (p) 83:2 87:14		157:5 163:17 183:8	
181 (p) 40:11 41:18	930 (p) 3:17 38:4	2 (p) 83:2 87:14		197:21 199:4 202:18	
182 (p) 40:11 41:18	940 (p) 3:17 38:4	2 (p) 83:2 87:14		200:20 208:11	
183 (p) 40:11 41:18	950 (p) 3:17 38:4	2 (p) 83:2 87:14		accidents (p) 17:9	
184 (p) 40:11 41:18	960 (p) 3:17 38:4	2 (p) 83:2 87:14		169:14 216:2 216:3	
185 (p) 40:11 41:18	970 (p) 3:17 38:4	2 (p) 83:2 87:14		216:5 216:6 216:7	
186 (p) 40:11 41:18	980 (p) 3:17 38:4	2 (p) 83:2 87:14		accomplish (p) 120:22	
187 (p) 40:11 41:18	990 (p) 3:17 38:4	2 (p) 83:2 87:14		according (p) 40:5	
188 (p) 40:11 41:18	1000 (p) 3:17 38:4	2 (p) 83:2 87:14		88:23 92:20 105:21	
189 (p) 40:11 41:18	1010 (p) 3:17 38:4	2 (p) 83:2 87:14		115:9 115:12 118:21	
190 (p) 40:11 41:18	1020 (p) 3:17 38:4	2 (p) 83:2 87:14		122:24 123:1 123:4	
191 (p) 40:11 41:18	1030 (p) 3:17 38:4	2 (p) 83:2 87:14		137:5 142:12 163:2	
192 (p) 40:11 41:18	1040 (p) 3:17 38:4	2 (p) 83:2 87:14		157:5 163:17 183:8	
193 (p) 40:11 41:18	1050 (p) 3:17 38:4	2 (p) 83:2 87:14		197:21 199:4 202:18	
194 (p) 40:11 41:18	1060 (p) 3:17 38:4	2 (p) 83:2 87:14		200:20 208:11	
195 (p) 40:11 41:18	1070 (p) 3:17 38:4	2 (p) 83:2 87:14		accidents (p) 17:9	
196					

[Index Page](#)

Index Page 7Index Page

[Index Page](#)

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JACQUELINE KLAPP, CCR - (908) 782-0874

Index Page 10

JACOB L. FISHER, Ph.D. - 2/18/14				Condensent™				Kinematics - mean			
kinematics (n) 3216	lateral (n)	104.5	Leverage (n)	209.12	1675	1676	1731	4617	4823	63.5	
32:17 46:21 58:13	160:19 162:6		levity (n)	146:17	1732	1734	1735	63:23	72:9		
1675 1676 1731	law (n) 151:15		license (n)	81:15	1781:1	179:12	179:13	MARIA (n)	14		
1841:6 210:25 216:20	lay (n) 32:7	46:19	lift (n) 152:18		181:1	182:10	182:15	mark (n) 25:21	26:1		
kingpin (n) 31:18	lay (n) 64:19	65:2	lift (n) 191:16		198:16	206:24	216:19	26:13	91:16	96:8	
20:116	lay (n) 190:1		lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
K.I.A.P.P (n) 1:22	lay (n) 64:19	65:2	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knave (n) 209:15	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knees (n) 98:21	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knave (n) 99:25	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knobs (n) 97:18	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knocking (n) 138:20	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knocking (n) 159:29	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
14:52:2 173:3	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knowledge (n) 39:13	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
64:17 10:12 11:19	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
knobs (n) 33:24	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
9:6:2	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
Koepke (n) 8:11	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
L (n) 3:13	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
3:17 217:18 218:6	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
21:95	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
L-frame (n) 181:9	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
lacrater (n) 49:22	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
lacrater (n) 62:19	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
53:13 53:19 53:17	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
54:13 54:5 54:10	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
54:15 61:3 61:21	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
68:18 69:23 143:7	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19	26:13	91:16	96:8	
143:19 143:24 146:20	lay (n) 190:1	64:20	lift (n) 261:14		208:1	208:24	216:19				

JACQUELINE KLAPP, CCR - (908) 782-0874

Index Page 11

ACOB L. FISHER, Ph.D. - 2/18/14

Condensel™

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JACQUELINE KLAPP, CCR - (908) 782-0874

Index Page 12

JACOB L. FISHER, Ph.D. - 2/18/14

Condensel™

O'Neil - penning

11715	11717	11718	official (n)	383	opinion (n)	347	page (n)	32	1918	4112	4515	6525		
11722	1211	1213	often (n)	2135	2172	5425	506	5111	1919	204	208	6713	7515	9867
12115	1211	1218	2172			5415	6818	849	211	214	217	10921	10924	1536
13210	13317	13318	OLD (n)	1	23	5415	6818	849	211	214	217	1532	1534	29120
13211	13324	295	OLP (n)	1	23	1550	15621	1573	451	4521	4525	498		
13410	13411	13417	Olson (n)	8	157	1574	20419		4916	4916	5018			
13422	13423	1353	Olson's (n)	932	454	4515	4615		5021	5022	515			
13521	13522	13533	13718			4515	4615		681	691	6921	6922		
13623	13717	1553	Olson's (n)	1581		opportunity (n)	7222		1002	1012	1014	1021		
O'Neil (n)	1111		On-Highway (n)			9616			1151	1591	1621	1626		
object (n)	1715		413	9610		opposed (n)	2921		1601	1607	1617	1621	1813	1313
546	824	1049	once (n)	5616	8532	8515	21425		1612	1615	1616	1616	1814	3421
19410	19410	2005	11611	11611	12125	opposite (n)	7114		1617	1617	1610	1613	3919	5620
19410	19410	2005	1225	1224	1414	781	782	18317	19215	2068	207	207	1427	1427
19410	19410	2005	14814	14814	20114	9512			19215	2068	207	207	1427	1427
9522	9522	5117	20722			orbits (n)	15425		19215	2068	207	207	1427	1427
object's (n)	512		one (n)	620	922	order (n)	913		19215	2068	207	207	1427	1427
objects (n)	1422		144	1613	1614	3815	8625	10322	19215	2068	207	207	1427	1427
2162	184	2616	184	2616	285	10313	10821	11017	19215	2068	207	207	1427	1427
6320	317	3115	317	3115	3121	13714	13746	14617	19215	2068	207	207	1427	1427
oblivion (n)	6411		3210	3210	3622	388			19215	2068	207	207	1427	1427
obscured (n)	16720		3814	478	5423	1112	1885		19215	2068	207	207	1427	1427
16722	1995		559	5625	632	orientation (n)	109		19215	2068	207	207	1427	1427
16722	1995		632	637	639	1010	4614	4618	19215	2068	207	207	1427	1427
16722	1995		6312	6512	6513	7515	7519	989	19215	2068	207	207	1427	1427
16722	1995		6522	662	6621	1011	4613	1229	19215	2068	207	207	1427	1427
16722	1995		6823	694	7118	1326	13410	13418	19215	2068	207	207	1427	1427
16722	1995		7118	7118	7822	1791	1715	1954	19215	2068	207	207	1427	1427
16722	1995		7822	792	793	oriented (n)	467		19215	2068	207	207	1427	1427
16722	1995		832	856	856	603	616	801	19215	2068	207	207	1427	1427
16722	1995		9020	9020	9021	827	879	1312	19215	2068	207	207	1427	1427
167			9020	9020	9022	1312	13819	17617	19215	2068	207	207	1427	1427
167			9020	9020	9022	1312	13819	17617	19215	2068	207	207	1427	1427
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167			9020	9020	9022	1312	13819	17617</						

JACQUELINE KLAPP, CCR - (908) 782-0874

Index Page 13

ACOB L. FISHER, Ph.D. - 2/18/14			Condensed			prevent - represented				
1797	19318		14215 20135	2038	7521 812	8825	recite (t)	4625	10721 11321	20410
prevent	2924		pulls (t)	20120	1284	1303	recited (t)	4520	2039	20917
17612			puncture (t)	5310	raised (t)	975	recognized (t)	7120	releasing (t)	14219
Preventive (t)	21124		5313 5316	18	range (t) 8782	8721	recognition (t)	1112	relic (t)	4522
prevents (t)	17621		Punctures (t)	5319	1037	1501	reconcile (t)	19122	reliant (t)	2113
previously (t)	1424		purpose (t)	167	rank (t)	372	reconcile (t)	19122	reliant (t)	102
12822 19524			purposes (t)	169	rather (t)	8925	reconsider (t)	6817	relying (t)	2927
primarily (t)	2018		166	247	15814		reconstruct (t)	1731	relying (t)	2023
1127 120125	1121		3322 453	8311	17	1723	reconstructed (t)		relying (t)	9924
672 12132			9322 994	13515	Ravi (t)				rely (t)	2023
Princeton (t)	1218		1340 1592		15011				rely (t)	2023
216			pushing (t)	17524	20135				rely (t)	2023
print (t)	125	821	push (t)	2518	275	218	reconstruction (t)	1020	rely (t)	2023
printable (t)	123		324 417	457	reached (t)	454	1201 2014	2020	rely (t)	2023
printed (t)	1124		4816 5117	7125	16612		11310 1471	823	remainder (t)	2112
1421 151			722 8817	1497	react (t)	20711			remains (t)	231
privileged (t)	1215		1621 18020	2020	reaction (t)	10824			remains (t)	231
131 139 159			putting (t)	5117	read (t)	3911	404		remains (t)	231
probability (t)	15118		5120 5811	5820	6812 6922	6925	1367 14019	5121	remains (t)	231
1			161 15019		1007 1013	7619			remains (t)	231
problem (t)	4613		quantified (t)	1356	10074 11520	15617			remains (t)	231
1345 14917			324	171	1842 10				remains (t)	231
proceed (t)	618		quantified (t)	413	reading (t)	4311			remote (t)	7018
proceeding (t)	807		8920 9922	1082	4815 4920	514			remote (t)	7018
1712			15910		527 12616	2136			remove (t)	7312
product (t)	1213		quantify (t)	2913	reads (t)	15618	18424		removed (t)	7311
17 179 194			8924 15515		ready (t)	618			removed (t)	7311
professional (t)	6411		questioner (t)	516	ready (t)	10423	12612		removed (t)	7311
professionals (t)			questions (t)	915	16714 20135				removed (t)	7311
57317			918 1013	1016	really (t)	3818			removed (t)	7311
professors (t)	21422		1017 232	719	6225 9115	14823			removed (t)	7311
6612 726	6611		1017 232	719	18713 18713	2096			removed (t)	7311
17318 7315			quick (t)	1407	18713 18713	2096			removed (t)	7311
18616			quicks (t)	5962	12516 12713	12713			removed (t)	7311
proof (t) 15326			12623 12624		1283 1681	1839			removed (t)	7311
propelled (t)	1838		12623 12624		1872 1913	19414			removed (t)	7311
proposed (t)	21911		12623 12624		19615 19812	20022			removed (t)	7311
proposition (t)	8712									

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